

Responding to changing skill demands: Training packages and accredited courses

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Appendix A

Changes in workplace practices— An enterprise perspective

Table A1 Changed work practices over the last 20 years: What enterprises say

Company	Cultural change	Automation	Skills change	Compliance	OHS	Environmental	Tools required	New materials
Company A: Crash repairs)	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Company A: Crash repairs administration	Yes	Yes	No	Yes	Yes	No	No	No
Company B: Mechanical repairs and service (heavy vehicles)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Company C: Mechanical repairs and service (light, and commercial)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Company C: Mechanical repairs and service (light, and commercial) administration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Company D: Retail large department store	Yes	Yes	No	No	No	No	No	No
Company E: Major hotel (front of house)	Yes	Yes	No	Yes	Yes	Yes	No	No
Company E: Major hotel (management and administration)	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Company E: Major hotel (events management)	No	Yes	No	Yes	Yes	No	No	No
Company E: Major hotel (restaurant, kitchen)	No	No	No	Yes	Yes	Yes	No	No
Company F: Aviation (passenger services)	No	Yes	Yes	No	Yes	Yes	No	No
Company F: Aviation (cargo services)	No	Yes	No	Yes	No	Yes	Yes	No
Company G: Transport and logistics (taxi)	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Company G: Transport and logistics (taxi administration)	Yes	Yes	Not really	No	Yes	No	No	No
Company H: Financial services (banking)	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Company I: Financial services (financial planning)	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Company J: Property management and real estate	Yes	Yes	No	Yes	No	No	Yes	No

Company	Cultural change	Automation	Skills change	Compliance	OHS	Environmental	Tools required	New materials
Company K: Painting and decorating	Yes	No	No	No	Yes	Yes	No	Yes
Company L: Travel and tourism	No	Yes	No	Yes	No	No	No	No
Company M: Hotel 5 star (front of house)	Yes	Yes	No	Yes	No	Yes	No	No
Company N: Cabinet making, kitchens	Yes	Yes	Yes - CAD No - production	Yes	Yes	Yes	Yes	Yes
Company O: Plumbing	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Company P: Funeral directing	Yes	No	No	Yes	Yes	Yes	No	No
Company Q: Transport and logistics (freight)	Yes	Yes	No	Yes	Yes	Yes	No	No
Company Q: Transport and logistics (freight)	Yes	Yes	Yes	Yes	No	No	Yes	No
Company Q: Sales executives	Yes	Yes	No	Yes	No	No	Yes	No
Company R: Financial services (sales business development officers)	Yes	Yes	No	Yes	Yes	No	No	No
Company S: IT (programming)	Yes	Yes	Technical - No Inter-personal - Yes	Yes	Yes	No	Yes	Yes
Company S: Accounting	Yes	Yes	Technical - No Strategic, inter-personal - Yes	Yes	No	No Manufacturing Companies - Yes	Yes	No
Company S: Bookkeepers	Yes	Yes	No	No	No	No	Yes	No
Company: Administration	Yes	Yes	No	No	No	No	No	No
Company S: Library technician	Yes	Yes	Yes	No	No	No	Yes	Yes
Company T: telecommunications (CEPU)	Yes	Yes	No for technicians Yes for those working on national grid equipment	Yes	Yes	Yes	Yes	Yes
Company U: Bricklaying (domestic)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Company V: Airport sector (air site security, and environmental management)	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Company V: Airport sector (administration)	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Company V: Airport sector (administration)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

Company	Cultural change	Automation	Skills change	Compliance	OHS	Environmental	Tools required	New materials
Company W: Brick and block-laying association	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Company W: Commercial building (carpentry and joinery)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Company X: Telecommunications postal	Yes	Yes	No	No	No	No	Yes	No
Company Y: Retail (large department store –administrators)	Yes	Yes	No	Yes	No	No	Yes	Yes
Company Y: Retail (large department store – sales assistants)	Yes	Yes	No	No	No	No	Yes	Yes
Company Y: Retail (large department store – merchandisers)	Yes	Yes	No	No	No	No	Yes	Yes
Company Y: Warehousing	Yes	Yes	No	No	No	No	Yes	Yes
Company Z: Automotive manufacturing, trades	Yes	Yes	Yes/No	Yes	Yes	Yes	Yes	Yes
Company Z: Non-trades (production operator)	Yes	Yes	Yes/No	Yes	Yes	Yes	Yes	Yes
Company Z: General approach	Yes	Yes	Yes/No	Yes	Yes	Yes	Yes	Yes
Company AA: Funeral directing	Yes	No	No	Yes	Yes	No	Yes	
Company AB: Manufacturing stainless steel fridges, urinals, (commercial kitchens)	Yes	Yes	No	No	?	Yes	Yes	Yes
Company AC: Competitive manufacturing training simulators	Yes	Yes	No	No	?	?	?	?
Company AD: Sub assemblies for automotive manufacturing	Yes	Yes	No	No	Yes	Yes	?	?
Company AE: Manufacturing, air radiators	Yes	Yes	No	NO	?	Yes	No	No
Company AF: Drilling	Yes	Yes	No	Yes	Yes	Yes	Yes	No

Appendix B: ISC case studies

In this section we document significant changes in Training Packages that have been reported to us in our consultations with ISCs. In some cases ISCs describe events or changes that were projected to happen at the time of our discussions with them. Some of these intended changes may have already happened subsequent to these discussions. These may not always be reflected in the following descriptions.

Construction and Property Services ISC (CPSISC)

This ISC covers two major sectors: the construction, plumbing and services industry and the property services industry. It has a broad coverage and employs around 1.6 and 1.7 million employees, in 526000 enterprises.

The construction and plumbing industry employs 910,000 workers who are mostly male and work full-time. It covers: on-site residential and commercial construction (bricklaying, carpentry, joinery, steel-fixing etc.) and support services (surveying, building planning, design), and off-site construction (shop-fitting, sign manufacture), all plumbing services (roofing, mechanical services, fire protection), and support services.

1. These sectors exist in a heavily regulated environment, at state, national and local district council level. They have also been subject to the recent movement for ecological and environmental accountability.
2. The property services industry has over 850 000 workers working in full-time and part-time jobs in 22 separate industries.
 - a. The three major areas comprise: **property development, sales and management**, including, commercial and property management of single or multiple properties, real estate services, community and strata management and spatial information services
 - b. **Security**, including investigative services, security operations (guarding and crowd control, control room operations, risk management services), installing electronic alarm systems, and providing security monitoring services
 - c. **Asset maintenance**, including general cleaning (residential and commercial sites) and specialist carpet cleaning, installing, inspecting and maintaining fire protection equipment and fire safety systems, pest management, waste management services.

The establishment of the national ISC has also seen the consolidation of six Training Packages into two packages. Today the ISC has CPC08 Construction, Plumbing and Services Integrated Training Framework and CPP07 Property Services Training Package. The PRM04 Asset Maintenance Package is being integrated with the CPP07 Property Services Training Package.

What follow are a variety of examples to indicate how different Training Packages developed by CPSISC have responded to changing circumstances.

Key changes in Construction Training Package

There have also been considerable changes between 2003 and 2008 to the Construction Training Package to incorporate different qualifications including certificates I and II. Prior to 2004 there were no qualifications above certificate III. In 2004 the Certificate IV in Building and Construction was created. This qualification is becoming the standard for licensing for builders. Prior to 2004 there were no management qualifications; currently there are 11 management qualifications.

The construction industry has had reservations about the introduction of certificates I and II because there did not appear to be a vocational outcome. In 2003 the certificate II for builder's labourers was introduced. Today there is a certificate I aimed at year 10 students and a certificate II for builder's labourers (in general construction). There is a certificate II pathways qualification. The certificate I is a taster qualification to try and identify those students who really want to be in the trade. The certificate II pathways consists of a set of core units and a set of electives from each of the trades to enable students to experience the type of work involved across the trades and to choose whether or not it is for them. Certificate II qualifications for steel-fixing, concreting and stone working have been also been added; however, there is some debate about the level at which these qualifications are pitched and these are now being integrated into the General Construction Certificate II qualification.

Certificate III trade qualifications continue to operate as before with modification to incorporate issues of sustainability and environmental accountability. Lower-level units aim to prepare apprentices to work in a sustainable way including reducing wastage, selecting better materials and doing things more effectively. The Certificate IV in Building and Construction (Building) CPC40110 qualification also has units aimed at reducing water wastage, minimising waste on-site, taking care in selecting materials that are easily disposed of, and understanding the efficiency of different applications. CPSISC has developed training resources for ceiling insulation.

Units dealing with reducing water usage, with systems for managing grey water and with treated sewerage for watering parks have also been added to plumbing qualifications. Changes to multiple plumbing and services units of competency were driven by new communication technologies, such as hand-held computers accessing industry specifications and cameras to film workplace problems for solutions off-site.

The ISC also saw a need for a certificate III qualification in roller door installation, but the industry groups did not believe this to be a trade.

In September 2008 a new qualification and units of competency for the sign industry replaced outdated qualifications in the superseded Off-Site Construction Training Package. The drivers were new technologies and work practices in the sign manufacturing and installation industry (including digital signage, and use of LED low-voltage lighting systems replacing neon).

At the same time there was a change to the CPCCCM1002A 'Work effectively and sustainably in the construction industry', a core unit in all construction qualifications. This was introduced to respond to regulatory requirements as well as to changing workplace norms. Changes with respect to new technology and consumer expectations for sustainable work practices and environmentally friendly cleaning and waste management were also reflected in changes to the Certificate III in Painting and Decorating.

Additional qualifications at the Certificate IV, diploma and advanced diploma qualifications were introduced for the BCG03 General Construction Training Package. These were developed in response to the demand for better technical and managerial skills in the industry, including use of computer planning and drafting systems, the building of thermally efficient and sustainable structures, managing water systems and minimising waste on building and construction sites.

CPSISC works closely with State bodies such as: Construction Training in Queensland which is funded from the levy which provides about \$25 million. It has a large staff and training facilities completed with CAD machines on which to train and also to give a service to the RTO or builders (on a fee-for-service basis).

Industry is especially keen to protect the broad-based training associated with traditional trades. A recent visit to the United Kingdom by the ISC has found that those who did not have the broad-based trade qualification were often the first to be put off in a recession. For example, the individual who was only doing 'framing' would not be able to pick up other work. Another problem that arises when there is no focus on broad-based training is that it does not build skills base of the industry.

PRM04 Asset Maintenance Training Package

In 2004 the PRMPFES43A 'Prevent ozone depleting substance and synthetic greenhouse gas emissions' was incorporated into the Asset Maintenance Training Package. In 2008 it was incorporated into the CPC08 Construction Training Package and the CP32808 Certificate III in Fire Protection. This unit covers the necessary work practices and technology required to reduce emissions that are harmful to the environment.

PRS03 Asset Security Training Package

In 2005 the ISC identified biometrics as a fast-growing area in the security industry. The development of facial recognition, iris scanning and finger print scanning technologies was also advancing. To this end ISC staff have attended a conference in the United States to learn more about the technology. Such technologies are being taken up by customs and immigration agencies, upmarket hotels and gyms and even school canteens. The Australian biometric standards have also been developed. In January 2007 there were an additional nine units of competency developed to cover biometrics. These new units cover emerging high technology security industry systems and tools. These were also introduced into the CPPO7 Property Services Training Package available in May 2008.

(CPP07)Property Services Training Package

There is a real need to look at national licensing systems, especially for real estate. The ISC has developed an online resource centre, which links to each of the licence requirements for each state and territory. CPSISC is participating in COAG working groups on National Licensing, including property services.

Listening to clients and stakeholders

The ISC has an online issues register which enables any individual to register a comment with regard to projects and processes, qualifications, units of competency, or the CPSISC website. Individuals may also want to attach a file that they want the ISC to take into account (for example, minutes of meetings). Issues are assigned to a project manager. The originator of the email will also be sent an automatic email to notify them of what is happening about their issue. Although the numbers of emails are few there are many calls that the ISC has to respond to.

Sharing information

The ISC has also established an online resource centre and a network of RTOs which deliver its qualifications. Members of the RTO network can access the resource centre to share resources and provide feedback. The ISC also targets RTOs that are delivering construction training to become part of the network. The ISC has run workshops in every state and territory to inform RTOs about the resource centre and to survey RTOs about the types of services they would like. So far there is an appetite among RTOs for professional development in their specific areas.

There is a strong wish for security licensing to be nationally consistent and the ISC is currently applying a great of effort into getting this resolved. However, there is a strong awareness that the states will continue to do their own thing.

The ISC is also keen to improve the image of security guards. The focus is on portraying security guards as ordinary workers who go home to their families at night. The problem is that the media may distort the image. The media are encouraged to use the term 'venue controllers' rather than bouncers. The aim is to attract people to the industry who are professional and have good interpersonal skills.

The ISC has also been involved in helping to organise training for 6000 guards, mostly in New South Wales but also in other states. This was done for the Sydney Olympics and put quite a heavy burden on state VET funds. The ISC was also involved in the provision of advice on management training for security for the Beijing Olympics. They were provided with a copy of the Security Sector of the CPP07 Property Services national Training Package.

Recently the ISC also met with the Minister for Apprenticeships in the United Kingdom and shared strategies to be used for the London Olympics in 2012.

Meeting future skill needs

1. The **Property Services Training Package CPP07** will require continuous improvement to meet emerging use of technology in the real estate sector, where online sales and transactions are becoming increasingly important. The security sector will require improvement to cover new surveillance technology, mesh networks and biometric security services. The Training Package already has biometric standards incorporated, but the technology is moving fast so that it will require regular updating. Spatial information services will also require regular upgrading as new uses are found for the technology. In higher-end job roles there may be increased demand for more flexible training modes (including start on demand and distance learning).
2. A full review of the **PRM04 Asset Maintenance Package** has indicated the need to incorporate waste management competencies to address legislative requirements and new technologies. There is also a need to address demand for higher-level technical skills in pest detection and control and in the use of new technologies and materials. Increasingly, the focus will be on the reduction in chemical usage and risk of contamination. Continual improvements in techniques for cleaning services will be required to meet HACCP (Hazard Analysis and Critical Control Points) requirements. This package will also be integrated with the CPP07 Property Services Training Package.
3. The **CPC08 Construction, Plumbing and Services Integrated Framework Training Package** will also be reviewed to ensure that all qualifications include competencies in environmental sustainability, and address emerging national licensing requirements under the New Licensing System. Existing units for high risk work licensing will be reviewed to ensure safety in areas such as dogging, rigging, scaffolding and tower crane erection and

use. New qualifications for advanced fire services management and hydraulic designing were added to the package in 2009. Industry demand for flexible work practices through multi-skilling to enable the industry to retain workers will also need to be addressed.

4. A greater emphasis on language and literacy programs to be integrated with skill development to meet the needs of non-English speaking and migrant backgrounds is also selected for future attention. There will also be a greater focus on improvement of pathways advice and school-based pre-apprenticeship training.

Transport and logistics ISC

The Transport and logistics industry is often referred to as the ‘backbone’ of the Australian economy. It directly affects every part of the economy and everyone’s standard of living – from what we buy, to the price we pay for goods, to how we get from place to place.

Transport and logistics is a diverse industry that covers four modes of transport: air, road, rail and sea. It enables the movement of goods, services and people. More broadly, the industry involves almost every type of occupation, from crews of vehicles, trains, vessels and aircraft to staff involved in engineering, infrastructure, tourism, hospitality, security, retailing, warehousing, administration and IT.

In a practical sense, the linkages between the sectors in the industry are highly integrated. Modern transport infrastructure comprises interconnected transport nodes that are serviced by two or more modes of transport, such as rail to port. These networks have become increasingly complex and, in many instances, have involved the rapid introduction of new technology. The multimodal nature of transport and logistics has significant implications for the skills required by the current and future workforce.

Because of the integral role that transport and logistics plays within the broader economy and the embedded nature of its functions, the relative ‘health’ of the Transport and Logistics Industry is often considered a barometer for the overall strength of the economy.

The *Australia to 2050* report highlights the impact of infrastructure investment on lifting economic growth. This was underscored by announcements of increased Commonwealth Government investment, totaling \$36 billion, in roads, railways and ports. The success of these projects will depend on access to highly skilled people across a broad range of transport and logistics capabilities in the construction and operational phases.

Infrastructure has emerged as a key national priority, with renewed focus on long-term planning and the identification of inefficiencies and bottlenecks. Regulatory reform has been aimed at ensuring the coordination of all levels of government to build an efficient, safe, sustainable, accessible and competitive transport system. Initiatives include the creation of single national regulators for heavy vehicles, rail safety and maritime safety.

Australia’s freight task in 2020 will be double that of 2006. By 2050, it will be tripled. Capacity constraints and congestion are already evident, which means that delivering transport and logistics services will become increasingly difficult for the 165,000+ enterprises in the industry. The flow-on effect of this to other industries will be significant; an efficient Transport and Logistics Industry allows other industries to maintain competitiveness through efficient supply chain and transport systems.

Conservative estimates put employment growth in transport and logistics at an average 1.3 per cent a year until 2013-14. The all-industries rate for the same period is one per cent. These figures were calculated before the infrastructure projects were announced, making it likely that employment demands in transport and logistics will be higher than the projection.

The workforce

The Transport and Logistics Industry is a significant contributor to the nation’s prosperity through the efforts of its 1.2 million-strong workforce and through the vital role it plays in underpinning the competitiveness of all other industries.

The increasingly global scale of the industry means that Australian employers are exposed to global labour shortages in some occupations. The impact of these shortages is varied. In many instances, it

places significant pressure on organisations through rapid growth in salaries caused by competition from other industries for the same skilled workers.

The skills base and labour pool in Australia's Transport and Logistics Industry will need to increase in size and capability if it is to respond to the challenges arising from the productivity agenda and population growth. The capacity for the industry to access training staff will remain a key challenge as the economy strengthens. In some job roles this issue is more critical than others. Constraints around accessing highly qualified personnel for roles such as marine pilots and drivers for articulated vehicles can have serious ramifications for the movement of freight and resources across the country.

Some of the key skill and workforce development challenges facing the industry include.

- ❖ **Availability of a skilled workforce at the right in time and in the right place.** Because of the variability of workflow, transport and logistics employers are often interested in hiring labour and skills on a just-in-time basis. As a result, long-term workforce development initiatives are rarely used. This has implications for workforce efficiency and, in the longer term, for industry productivity. More recently, the Transport & Logistics Industry Skills Council (TLISC) has worked closely with a range of organisations seeking assistance with issues relating to workforce development. Feedback on this work suggests many Australian businesses recruitment practices appear to rely on attracting existing skilled labour from other sectors or industries rather than training new staff.
- ❖ **Transport and logistics labour exits during resource and construction booms.** The latest industry evidence indicates that Australia's resource and construction industries are growing again. As the economy strengthens and the demand for labour increases, it is expected that the Transport and Logistics Industry will once again experience a labour shortage, especially in critical skills areas. It is therefore imperative that employers implement proactive strategies to retain present staff and recruit new staff who have the required skills (or the capacity to achieve them) to meet future demands.
- ❖ **Harmonisation of Training Packages.** Over the past 12 months, the Transport and Logistics Training Package and the Aviation Training Package have been reformed to ensure that qualifications meet occupational outcomes. Qualification packaging rules have been improved to ensure they accurately reflect actual job roles and support COAG imperatives around national licensing and the harmonisation of licensing and national training requirements. Green skills have formed a key part of TLISC work over the past 12 months, including an evaluation of the degree to which green skills appear in transport qualifications. This work, coupled with initiatives in the workplace designed to reduce the industry's impact on the environment, will provide a platform for changing perceptions about the industry and the role it can play in reducing Australia's carbon footprint.
- ❖ **National regulation for the National Training System.** The creation of a single regulator for the vocational education and training (VET) sector has been welcomed by the Transport and Logistics Industry. Improvements in the application of funding to support industry training in a consistent and reliable framework is an absolute must to sustain the interest of organisations that operate nationally.

Feedback to the TLISC indicates the industry is interested in maximising the benefits of the National Training System through the use of consistent processes in how training services can be accessed, when and where the industry seeks to raise workforce skill levels. Industry feedback indicates that transport and logistics is preparing for improved economic conditions. However, there is some concern about access to skilled labour within short timeframes for demand spikes. These conditions alert us to the need to pre-train staff and to extend national training arrangements to encourage people who are under-employed or unemployed to undertake training.

Increasing the pool of drivers licensed for heavy vehicles will be critical for the labour market of the future. Further analysis of the maritime task and ways in which Australia's coastal and deep

water shipping skills can be maintained will require commitment by the industry, regulators and government.

Central to our future success will be innovative leaders who bring high-level business management skills combined with good people management skills. For the Transport and Logistics Industry, the skills of our people and the adequacy of the labour pool will be the ultimate determinants for growth and development. The value of our investment in them and in their development cannot be understated.

The Transport & Logistics Industry Skills Council

The Transport & Logistics Industry Skills Council (TLISC) was established in November 1994 as the National Transport and Distribution Industry Training Advisory Board (ITAB). This organisation formed part of the national structure for Industry Advisory Board arrangements.

Throughout its 16 years of operation, the organisation has developed extensive stakeholder networks and engaged the industry and its peak bodies, regulators, government, unions and other key stakeholders. Engagement with industry is extremely positive; the contribution that industry makes through the provision of information, technical expertise and the use of personnel for advisory groups is significant.

The TLISC fulfils a pivotal role in the Transport and Logistics Industry through the provision of workforce development services, the review and development of national Training Packages, and industry-based research designed to inform skills and labour development strategies.

Training Packages

The Transport and Logistics Industry Skills Council is responsible for three Training Packages: TLI07 Transport and Logistics, AVI08 Aviation, and TDM07 Maritime. Historically, training arrangements for the industry was divided into a number of specific sectors, each with its own separate training arrangements. Since the late 1980s and with the development of the Australian National Training System qualifications for the industry have become more formalised and have been structured within training packages.

In 2007 the name of the Training Package changed from Transport and Distribution to Transport and Logistics, in line with the changed name of the Industry Skills Council. Transport and Distribution Australia was renamed the Transport and Logistics Industry Skills Council.

In the past much of the training for the industry had been compliance-driven for the acquisition of licences. This has changed as the industry has matured around a broader view of training that includes occupational mobility, multi skilling and career progression through skills acquisition.

The major drivers for Training Package changes have been compliance-driven, especially in terms of COAG directives. Rapid advances in technology, including radio frequency identity tags, track and trace systems, and automated warehousing functions have also been reflected in the Training Package as well as on-the-job functions.

A key role of the Skills Council is to engage with industry in the review and development of vocational qualifications to meet the current and future needs in the workplace. This activity is typified by ongoing dialogue with key stakeholders in industry to ensure that training package qualifications reflect an industry need and are aligned to actual job roles found in the workplace.

Training Package Progress

Over the past 12 months, large reforms were made to the Transport and Logistics Training Package. Qualification packaging rules were overhauled to ensure that they more accurately reflected workplace job roles (existing qualification structures were de-nested). In addition, a range

of regulator-endorsed changes for drivers and other high-risk workers were embedded into qualifications. These changes reflect NQC policy, which aims to ensure that Training Package qualifications meet occupational outcomes.

Changes were made incrementally across the entire Training Package based on industry priority areas, COAG imperatives, and national licensing in the transport industry. Stand-alone qualifications for Freight Forwarding were developed in response to industry demand and advances in this sector.

A Skill Set for Road Tunnel Operators was developed based on industry feedback. This new Skill Set provides the foundation for nationally consistent training for this sector. Further qualification developments are expected in this area because of the increase in transport tunnels in Australia. In response to a National Regulatory Taskforce initiative, eight units of competency for taxi drivers were developed. These units provide the framework for harmonisation of taxi licensing nationally. Regulator-endorsed heavy vehicle driver licensing units were developed in response to COAG's agenda to align vehicle licence training with the Australian Qualifications Framework (AQF).

These units will enable heavy vehicle licence requirements to be embedded into relevant Training Package qualifications. In response to industry and Defence requirements, Logistics Skill Sets were developed to reflect occupational outcomes in national training arrangements.

The Skill Sets provide specialisation for: Integrated Logistics Support Practitioner, Logistics Sustainment Practitioner, Integrated Logistics Support Inventory Controller, Logistics Inventory Controller, Logistics Configuration Management, Integrated Logistics Support Management, Logistics Sustainment Management, Logistics Product Management, and Logistics Executive Management.

A qualification for Tram/Light Rail Driving and Monorail Operations was developed in response to a request from tram/light rail operators. A qualification for Rail Infrastructure Operations was developed in response to requests from the rail infrastructure sector. It contains specialised streams for the roles of: Track Maintainer/Installer, Track Surfacing, and Structures Inspection/Repair.

These qualifications are aligned at the AQF Certificate II level. Twenty-five Skill Sets for Rail Infrastructure Operations have been added. These Skill Sets identify competencies that align with the newly developed Certificate II in Rail Infrastructure. They provide a flexible means of developing or recognising the competence of persons engaged in one or more discreet rail activities.

Training Package Continuous Improvement

Continuous improvement priorities for the next 12 months include revision of qualifications that were not included in the version 3 update of the Transport and Logistics Training Package. Focus areas will include Stevedoring, Warehousing and Logistics qualifications. New qualifications for Yard Operations and Open Road Control Room Operations will be developed in response to needs identified by the industry.

A Diploma and an Advanced Diploma of Deployment Logistics will be developed. These qualifications relate to deployment, construction, maintenance and movement of equipment and personnel for an identified purpose to meet industry, Defence and humanitarian needs. Driving Operations and Freight Forwarding units of competency will be reviewed to account for recent developments in these sectors.

As part of this program of work, a Diploma of International Freight Forwarding will be developed in response to the emergence of this specialised job role and a priority need identified by the industry.

A Diploma of International Freight Forwarding will be developed. This qualification will meet industry demand and will align to the internationally recognised FIATA Diploma. New rail qualifications will be developed in response to industry-identified needs for these occupations:

Locomotive Driver, Senior Train Driver, Terminal/Shunter Driver, Urban Train Driver, Train Guard, Network/Train Controller, Signaller, Rail Infrastructure Supervisor, and Mechanical Signaller. Skill Sets will be developed for the following job roles and tasks: Terminal Operator/Ground Shunter, Driver Assistant/Second Person, and Track Protection and Safety.

Maritime Training Package TDM07

The maritime industry has been regulated by multiple regulators and these differences have been reflected in the Training Packages. In addition, differing legislation across states and territories have also had an impact. Traditionally, coastal waters are governed by state and territory legislation, while blue waters (which fall outside these coastal regions) are governed both by national and international legislation (that is, Australian Maritime Safety Authority (AMSA) and International Maritime Organisation (IMO) regulations).

Not long after formal endorsement of the first Maritime Training Package in 2001, regulators highlighted the omission of occupational roles that had not been previously discussed. To respond to this the Training Package was expanded to incorporate 21 units to deal with the suite of coastal occupations.

In 2007 there was a full review of the Training Package and industry wanted to ensure that the context in which it operated was accurately reflected. It identified three groups of maritime occupations: near coastal, ocean going, and other maritime occupations that were not strictly within the confines of the maritime regulations but also needed basic training, especially in occupational health and safety before going out to sea. This included waiters and tour guides on tourist vessels. Employability skills were integrated in the occupations.

With the proposed creation of the single regulator for the maritime industry [AMSA] the Training Package will have to accommodate additional qualifications in Blue Water and Ocean Going occupations.

Qualifications for coast level will need to be re-structured. These developments will also lead to clearer pathways. Skill sets are also proposed to address endorsements to maritime qualifications, as required by regulations, and other specific needs.

Training Package Progress

During 2009, the Skills Council worked closely with the Australian Maritime Safety Authority (AMSA) in the development of COAG's plans to align the national maritime qualifications with national and international maritime regulations (IMO). These developments will continue in 2010 and will form the basis of AMSA's national strategy for the alignment of deep water and near coastal licences and qualifications, the 'Tinny to Tanker' Plan. The key objective of this reform is to address existing impediments to training and career pathways for personnel in the Maritime Industry. It will result in the alignment of all (deep water and near coastal) maritime occupations to the Standard of Training,

Certification and Watchkeeping (STCW) and the requirements of training for near coastal maritime occupations (NSCV Part D).

Training Package Continuous Improvement

The Skills Council's continuous improvement plan for the Maritime Training Package has been amended for 2010 and includes:

- ✧ The re-coding and rationalisation of some units of competency in coastal occupations.
- ✧ Rationalisation of eight Skill Sets, which will address regulatory and other occupational requirements.

- ✧ The development of further Skill Sets to complete the suite of regulatory endorsements.
- ✧ The development of new qualifications for Maritime Surveyors.

These activities will be part of the review of the Maritime Training Package. It is intended that this review will provide a more coherent and up-to-date base for qualification development and alignment with regulatory reform.

Aviation Training Package AV108

The Aviation Training Package was first endorsed in 2003. The Skills Council is responsible for training and licensing for flight operations and ground operations (aero skills are the responsibility of the Manufacturing Services Australia). The Training Package has attempted to develop closer alignment between training and licensing. In 2007 the Training Package was reviewed. Since that time there has been a strategic drive for training in the defence forces to align with AQTF standards.

Skill sets for night-aided vision aviation operations, helicopter wireman and aviation supervisory cabin crew have been created. An additional 15 skill sets are proposed for the next iteration of the Training Package.

The Certificate IV in Aviation has the requisite skills and knowledge that must be satisfied to acquire a pilot's licence. The qualification is the industry standard for operators, while the licence represents the minimum safety standard.

When individuals with a qualification are seeking a civil aviation licence they must sit for the CASA test. To acquire a licence they must also be over 18 years of age, an Australian citizen, and pass a medical examination.

In the past there was little in the way of national qualifications for air crew and rescue crew. Since 2008 there have been qualifications for both these occupations: Certificate IV in Aircrewman, and Certificate IV in Rescue Crewman developed and housed in the national training package. The development of a Certificate IV in Aviation Leadership and Supervision was created as a response to a need identified by commercial airlines that have a pathway from air to ground occupations.

This applied to cabin crew who had been in supervisory positions in the air and were leaving these airborne positions and continued to be valued for their abilities by their employers. This qualification has a core unit structure that includes three units from the Certificate IV in Frontline Management. This structure enables individuals who acquire the qualification to use it to apply for supervisory jobs in other industries.

Future skills

Increasingly, there has been an emphasis on practical support services for industry. This includes strategies and programs for helping improve language, literacy and numeracy competencies of existing workers, and access and equity provision.

Workforce development is another major shift in the role of Skills Council and also represents a recognition to respond to changing environments. In the transport and logistics industry, which is mostly made up of small and medium enterprises, the task is more complex. This is because different strategies need to be employed across sectors and across size and type of organisations. In most enterprises this means looking at the skill needs of existing workers and making assessments about future skill needs in an enterprise.

A workforce development diagnostic tool 'skill gap' has been developed by the Skills Council to help enterprises capture information on the current and future skills required in their business.

Reflecting changing skills demands

The Skills Council has multiple ways for collecting feedback from industry as well as collecting information on what is happening in the workplace. This includes having industry specialists going out and collecting information from enterprises, as well as technical reference groups, steering committees, and networks. In addition, Skills Councils have a variety of informal ways for collecting information. Like other Skills Councils it also has in place a continuous improvement register where, feedback or suggestions are recorded. An advisory committee will examine issues that are flagged and assign them a priority for action.

Training Package Progress

During 2009, the Aviation Training Package was reviewed in response to needs identified by industry and Defence to incorporate extra units into the elective competency bank and to standardise packaging rules for several qualifications. These qualifications range from Certificate II through to Diploma and are in the areas of: Flight Operations, Ground Operations and Service, Leadership and Supervision, and Instrument Flight Operations.

In addition, the following Skill Sets were developed for the Aviation Training Package:

- ✧ Eight Helicopter Skill Sets to support helicopter pilots, aircrew and para- professionals operating in the helicopter environment. Areas covered by these Skill Sets are: Helicopter Piloting during Winching, Rappelling and Recovery Operations; Supervising or Undertaking: Winching, Rappelling and Recovery from/to Helicopter; Using Emergency Breathing Systems; Aircraft Underwater Escape and Survival; and Marine Transfer Pilot Specialist Skills.
- ✧ Aerobatic Pilot and Formation Pilot Skill Sets to meet Specialist Pilot requirements.
- ✧ Grade 3 Flight Instructor Skill Set (fixed wing), which aligns with CASA regulatory requirements for Grade 3 Flight Instructors.
- ✧ Simulator Operator, Simulator Trainer and Simulator Operator/Trainer Skill Sets to capture the emerging specialised roles resulting from the increasing use of simulation and synthetic training devices in aviation.
- ✧ Night Visual Flight Rules (NVFR) Skill Set, in response to an industry and regulator-identified need to create a Skill Set that aligns to NVFR regulatory requirements.

Training Package Continuous Improvement

Continuous improvement priorities for the next 12 months will involve the development of a range of new qualifications and Skill Sets. These include:

- ✧ Diploma of Aviation (Grade 2 Flight Instructor), which will align with CASA regulatory requirements for Aeroplane and Helicopter Flight Instructors (Grade 2). This will build a career structure from the Grade 3 Skill Set that is already in the Training Package. This qualification will be for Aeroplane and Helicopter Flight Instructors.
- ✧ Grade 1 Flight Instructor Skill Set, which will align with CASA regulatory requirements for Grade 1 Flight Instructors. This Skill Set addresses the additional responsibilities for supervision of other flight instruction personnel. This Skill Set is for Aeroplane and Helicopter Flight Instructors.
- ✧ Advanced Diploma of Aviation (Flight Instruction), which will align with CASA regulatory requirements for Chief Flight Instructors. This qualification is the occupational outcome for the most senior flight instructor in CASA's regulatory framework. It includes a range of technical and management capabilities that are additional to the regulated outcome. This qualification is for Aeroplane and Helicopter Flight Instructors.
- ✧ Review of remaining qualifications in the AVI08 v3 Training Package that were not included in the last update to ensure they meet occupational outcomes.

- ✧ Review of existing qualifications to ensure that packaging rules enable the selection of elective units to meet NQC and DEEWR policy changes.

Service Skills Australia

The scope of coverage of Service Skills Australia is broad. It covers wholesale and retail trade (including community pharmacy) sectors, personal services (including beauty, hairdressing, and funeral services) tourism, hospitality and events, and sport, fitness and outdoor and community recreation. The services provided in each of the sectors are labour-intensive. This has implications for the types of skills that employees are expected to have.

The ISC's 2009 environmental scan notes reports 344 655 mostly small businesses but also large and multinational companies (including franchises). The sectors employ around 2.5 million with an extra 1.7million volunteers engaged in mainly sport and recreation activities. Employment is often part-time, with 45% of the retail sector working on a casual basis. Productivity in key service sectors like retail, hairdressing and beauty, and restaurant business is especially affected by the health of the economy and its influences on disposable income.

In 2004 when the ISC was created it was responsible for 14 different Training Packages; today it is in the process of rationalising these into 8 Training Packages as directed by government policy. The Tourism and Hospitality Training Packages were combined and incorporated holiday parks and resorts. Responsibility for caravan manufacture was transferred to Manufacturing Skills Australia.

The issue of having appropriately trained assessors has been ongoing. The ISC has been keen to ensure the quality of assessments by requesting that it be able to define the type of experience required by assessors. This is because it is of the view that the 'vocational competence' was not sufficient in explaining exactly the type of experience and knowledge that was required. For the last ten years or so the ISC has also made a push for detailing the type of equipment used in training. This request has been only just recently been accepted.

Because having the right attitude is especially important to employers in the service industries there is a concern that there is not a strong enough emphasis on such skills in training.

What follow are a variety of examples to indicate how different Training Packages developed by Service Skills Australia have responded to changing circumstances.

WRH 06 v2 Hairdressing Training Package

Before the introduction of the first Hairdressing Training Package there was one qualification and this was at the trade level. When the Training Package was endorsed it had three qualifications (AQF Certificates II, III and IV), with the old trade certificate becoming the Certificate III in Hairdressing. National qualifications at certificate II level (pre-apprenticeships) were also developed but it was difficult to get such qualifications approved by industry. Initially it had also been difficult to get industry approval for the Certificate IV.

Today the current Training Package (WRH06) also comprises a diploma (the Diploma in Salon Management), which mainly deals with wages, ordering, banking, and human resource issues (related to hiring and firing). This qualification is aimed at those who are not hairdressers but are owner-managers of salons. It helps them to become acquainted with the industry and what is different in running a business. The certificate IV deals with management skills (at supervisory level) and continuing professional development. The ISC is looking to get vendor training also integrated into qualifications.

Hairdressing in most states was traditionally an apprenticeship which combined both off-the-job and on-the-job training. Although in some states like Victoria there have been private training

colleges for over 25 years or so, the increased deregulation of the training market nationwide has had a major influence on WRH06.

With the multiplication of new colleges offering institution-based training there was a need to ensure that students also gained workplace experience. To this end workplace units have been added to ensure that this occurs. Other changes to the Training Package relate to tightening up the language that is used in the range statements (for example, to ensure that certain techniques *must* be covered rather than *may* be covered). Assessment guidelines have also been tightened. Hair cutting was covered in one unit in the WRH06 package and broken down to 8 units to ensure that all of the technical skills of haircutting were covered (for example, design, cut, colour hair). In 2006 the Certificate IV in Tricology was also developed and added.

Innovation and sustainability

Innovation in hairdressing mainly deals with new equipment, new products that reduce damaging and techniques to create a specific look (for example, hair extensions). Often the unit of competency is not the thing that is changed but information about product innovation is included in the range statements.

Industry continues to support the use of a practical hands-on and face-to-face learning approach because it believes that quality hairdressing skills cannot be adequately acquired solely via computer-based or book-based learning. However, it supports the use of flexible delivery (including self-paced learning) to supplement and complement hands on and face-to-face learning.

In the last ten months the ISC has been devoting attention to the creation of user guides to help in the implementation of new Training Package policy.

The ISC has also tweaked various units to deal with green skills related to water usage and wastage, consumer demands, product design and product development. Currently there is a push within the some in the industry to remove 'perming' from the Training Package. Others believe that it should not be removed because 'perming' comprises a fundamental fine motor skill that can be applied to other techniques.

WRB 04 Beauty Training Package

Beauty qualifications comprise certificate II and III traineeships in beauty, certificate IV apprenticeships, and diplomas. Prior to these national qualifications the base qualification for beauty therapists was a diploma comprising 32 units of competency. Today the Package has also broken down units at lower level qualifications to accommodate nail technicians. The units of competency in the Beauty Training Package are written in broad ways so that they can easily accommodate changes.

A significant change that has required the development of new units in the Training Package is the increased use of intense pulsed light (IPL) and laser therapy hair reduction. This issue is also contentious as it tends to stray into the territory of paramedics and medical specialists. Currently the ISC is undertaking discussions with industry about the need for therapists to have experience and a post-graduate qualification (that is, the Vocational Graduate Certificate) before they are able to apply these techniques on clients. The Training Package has also incorporated prescriptive lists of equipment and assessor requirements to address inherent public safety issues associated with the application of these techniques (including deep burns and permanent scarring).

Because manufacturers are interested in promoting and selling their equipment it is not unusual for them to provide beauty therapists wanting to purchase the equipment with a one-hour training session or a DVD which gives them the same information on how to use the equipment. In 2004 the industry was concerned to ensure that therapists have the necessary knowledge about anatomy, skin biology, and physiology. This type of knowledge used to be included in the underpinning

knowledge component of the Training Package, which may have led to it being glossed over in training. This meant that students were not obtaining the requisite information. To deal with this the ISC introduced units which appear to be knowledge units but written in terms of their practical application.

Weighting has also been applied to ensure there is some equivalence (in terms of effort) across units. For example 'cosmetic tattooing' should not be a single unit as it includes micro-derm abrasion and electrolysis. This requires substantial knowledge requirements. In contrast, units like aroma therapy demand far smaller knowledge requirements than units like micro-derm abrasion.

In the 2008 the ISC reviewed the Training Package and is now changing the structure of the diploma to include a core specialisation and elective structure. The diploma will include 30 or 33 units. There will be one specialisation and seven electives.

FIS08 Funeral Services Training Package

Changes to work practices in the funeral services industry have required adjustments to the Training Package. For example, in grave digging there is increasing use of shoring technology and use of backhoes and digging equipment which have been incorporated into skill sets. Re-use of grave sites, vertical burials, and the lifting and placing of larger caskets into graves originally built for much smaller sized caskets have placed an increasing focus on occupational health and safety (especially in terms of lifting). Changing demand for caskets has seen the introduction of cardboard caskets, material caskets and the use of biodegradable materials. Casket manufacturing has been transferred to Manufacturing Skills Australia.

Changes in family expectations of funeral ceremonies have increasingly required funeral directors to incorporate greater use of audiovisual technology into the services. In addition, changed embalming practices including the use of different chemicals and the use of loin cloths on the deceased person to indicate increased respect have had to be incorporated into the Training Package. Once again the normal way is to change the range statement rather than the competency standard.

The number of qualifications in the Training package has been pared back, but the number of occupational health and safety units has increased.

SIR07 Retail Services Training Package

Changes in technology have been the major drivers of change in the Retail Services Training Package. The use of scanning technology and direct connection to suppliers has also required some adjustments to range statements.

Currently the ISC is looking at the development of units of competency in customer service. The needs of small business are not covered well in the certificate IV or the diploma. What is required is a more multi-skilled approach for small business.

Visual merchandisers have traditionally been people with arts and design qualifications. There have been some state-based qualifications. To develop a Diploma of Visual Merchandising the Training Package required the ISC to identify the skills that were required. Visual merchandisers need to be able to operate independently. They must also be able to build, construct and design and work within a budget. They must have skills in planning events, and seasonal activities (Christmas, Easter, Mother's Day, racing carnivals and the like). In addition, there are specific skills and knowledge for those individuals who work for national and international franchises. They must be able to work with the specific types of layout, colour schemes, flow of traffic and ticketing that are essential in displaying the culture and look of the store.

The Certificate IV in Retail has one unit specifically devoted to buying. This deals with negotiation skills. It is also aimed at administration assistants who are involved in checking catalogues and stocking supplies. The ISC in partnership with industry is aiming to develop a career pathway for

buying. However, it is aware that in Australia there is a history of importing buyers from overseas. Buyers are also often imported for their specific relationships. David Jones has a buying cadetship as does CUE. The key skills are creativity and visioning. Buying is a thin market.

Community pharmacy

This Training Package is especially affected by health policy relating to what can be sold over the counter, what can only be sold by the pharmacy and what can only be sold on presentation of a script. The Quality Care Agreement instituted by the Minister for Health has specified training that must be undertaken for dispensation of scheduled drugs. The ISC has created units around this skill.

With the advent of the rationalisation policy the ISC took the product units and blended the skills and knowledge required for analgesics, diabetes and other types of drugs. The pharmacy agreements were also directed towards growing the services to cover a range of services, including diabetes-type advice, blood pressure monitoring, wound care and aged care. These types of services will continue to grow, which means that there will be increasing demand for pharmacy assistants to develop or upgrade their skills and knowledge.

Future developments with respect to incorporating pharmacy dispensing into supermarkets will also need to be addressed if and when they occur.

The ISC has developed a series of user guides which spell out industry requirements, priority areas and skills shortages, and other issues that providers need to be aware of when implementing the Training Package.

WRS04 Floristry Training Package

The ISC is currently looking at defining and breaking down the units of competency so that they are clearer in their intent. It is also aiming to develop a higher-level qualification. The policy push is the government quest for workers to have higher skills.

Sport, Fitness and Recreation Training Package

Currently Training Packages in the sport, fitness and recreation sectors are split into four areas (Community Recreation SRC04; Fitness SRF04; Outdoor Recreation SRO 03; and Sport SRF 03). In 2009 the ISC has conducted a rationalisation process which will see these separate Training Packages combined to form the Sport, Fitness and Recreation Training Package SIS09.

The Sport and Outdoor Recreation Training Packages have remained relatively unchanged since first endorsed. Now the ISC is looking at a fundamental shift by reviewing commonalities between the different units and modifying the way the range statements are written. There has been a tightening-up of language to cover risks associated with outdoor activities. There is increasing use of the term 'must' rather than 'may' (where this applies) and the inclusion of prerequisite units.

The current structure of the Training Package tends to mandate a delivery strategy. For example, the Bushwalking Unit in the Diploma of Recreation required 47 prerequisites. Technically people could not enrol in the diploma without going through certificate II, III and IV. The introduction of skill sets to align with many accreditation schemes has been an attempt to give industries what they require.

Emerging industry trends include increased use of aerobics for fitness (there is a Certificate III in Aerobics Instructor) and a certificate IV for one-on-one personal training (design and delivery of program). The Diploma of Fitness has been introduced to recognise the role of fitness instructors in the preventative health agenda. The diploma also recognises the linkage between the work of fitness instructors and allied health professionals (exercise physiologist, dieticians, physiotherapists, and occupational therapists). Nevertheless, there are issues of territoriality between allied health

professionals (for example, relating to overweight people or smokers), but they are not fitness specialists or exercise specialists.

The emerging trends relate to an ageing population and the lack of enough workers to deal with the issues. This means that services will have to be provided by those with lower-level skills or qualifications, but under supervision.

The Diploma of Fitness was introduced in 2004. Some issues with implementation of the diploma relate to the amount of time that some private providers are taking to deliver the qualification. We are told that there are providers that are taking as little as four weeks to deliver the certificate III, IV, and diploma; these are qualifications being delivered in the public sector over two years. The problem with cutting down the amount of time allocated to training programs in significant ways is that it is difficult to see how students can demonstrate successful performance of high-level skills associated with high safety risks in the time allowed. Another issue is that, regardless of who is delivering the training, there are no requirements to include vocational experience in the awarding of a qualification; that is, the diploma is a generalist qualification. There are also issues of coverage in diploma qualifications. As the diplomas now stand, they tend to cover a little of everything, and little attention is paid to specialisations related to specific groups of at-risk clients (for example, individuals requiring muscular skeletal rehabilitation, and activities for arthritis, diabetes, or weight management).

The ISC is aiming to remove the generalist diploma qualifications and have students who complete the certificate III and IV move into employment before they return to acquire a vocational graduate certificate. However, there are already some states (like South Australia and Queensland) who have tried to deal with this issue by developing effective networks with allied health sectors, and the ISC must be careful to come up with a diploma that is more relevant.

Another reason for pinpointing the diploma as requiring further attention is that there are occupations in the sector that require more advanced skills and knowledge than those required by a personal trainer. The ISC is undertaking consultations with a variety of stakeholders and other sectors, including RTOs and the allied health sector. RTO consultations have concentrated on those providers who have had success in the delivery of the diploma to see how issues can be resolved. The ISC is keen to protect the articulation arrangements that some providers have established with universities (for example, exercise science and health science qualifications). As the diploma has ramifications for training in the allied health sector, it is important that the sector is given opportunity to provide feedback on the structure of the qualification. Although the ISC believes that it is important to protect articulation pathways that providers have built up with universities, it is also important to ensure that qualifications lead to vocational outcomes.

The ISC is currently extracting specific skills from the diploma and identifying these so as to rationalise the units of competency and to ensure the quality and integrity of the unit of competency. A fundamental shift concerns how the knowledge required in the packages is described. Another is the size of qualifications (in some cases running to 40–45 units), which may lead to atomistic provision. The ISC is rationalising these and merging the formerly stand-alone knowledge units into underpinning knowledge components. In some cases the amount of content knowledge required influences the level of qualification, with high knowledge content equating to higher-level qualifications.

The advanced diploma originally had 50 units and the ISC is currently attempting to make it more sport- and recreation-specific. There is a view that a more generic one would have been better as it would recognise the transferability of skills across different areas. The ISC would like to see the advanced diploma abandoned.

SIT 07 Tourism, Hospitality and Events Management Training Package

In the late 1980s the advent of new technology and increased regulation meant that the unit of competency associated with kitchen operations had to reflect new ways of working (including

automatic ordering, point-of-sale systems, and environmental issues). Regulatory changes about ensuring food safety required the development of food safety plans and audit processes.

There was also a breakdown of responsibility in restaurant service which had also to be reflected in units of competency. Bus boys were replaced by food runners. Changes to systems of ordering also required changes to a number of units of competency. One set of standards for commercial cookery was the starting point. These were then followed for specific standards for each cuisine type (for example, Thai, Malaysian). These were then pared back by selecting what was consistent across the cuisines and developing standards which were subsumed under the categories of Eastern and Western cuisines. The next iteration will focus on implementation and evaluation.

The ISC created a certificate IV and diploma to prepare people for events management positions.

The deregulation of the training market means that it has grown at a fast rate. However, there is not the supply of qualified individuals to be able to deliver and assess the training to acceptable levels.

Continuing concerns

The following constraints and concerns have been identified as requiring attention.

- ✧ There is a concern that training delivery does not reflect sufficiently on the needs of small business and the type of skills, knowledge and attitudes that small business requires.
- ✧ There is also a view that unit complexity needs to be reduced. The Training Package should also be able to say that the unit of competency can be assessed in different ways. One would have a fundamental unit of competency with supplements.
- ✧ There continues to be a concern with the length of time it takes for a change to be implemented.
- ✧ The drive towards further rationalisation has been a policy directive due to the perceived duplication and lack of uptake of some qualifications. However, in the Retail Training Package there is a high level of contextualisation due to the varied nature of the industry.
- ✧ The lack of uptake as reported in formal figures is felt to be insufficient reason for further rationalisation. This is because fee-for-service qualifications are not reported in the formal statistics and traineeships that are undertaken by private companies may not appear in contract of training reports. In addition, sectors using large numbers of skill sets linked to industry accreditation (like sport and recreation) are identified as courses which have high non-completion rates.
- ✧ The ISC is also of the view that systemic processes for getting new units or qualifications implemented stand in the way of a quick response to changing needs or skill demands and innovation.
- ✧ There is a need to recognise skill sets and give these some status in the national reporting system. By concentrating on full qualifications solely, the considerable amount of effort in some qualifications that is expended in skill sets goes unrecognised.

Innovation and Business Services Australia (IBSA)

IBSA covers six industry sectors business services, cultural and related industries, education, financial services, information and communications technology (ICT) and printing and graphic arts, and has responsibility for 11 Training Packages. It covers the following industry areas and sectors.

- ✧ Business Services: customer service, administration, management and leadership, retail
- ✧ Financial Services: accounting, banking, book-keeping, conveyance
- ✧ Cultural and related industries: librarians, staging and lighting, live performance
- ✧ Information and Communication Technologies: used across industries and can include employees and consultants working in networking and security, IT support and testing, database management and programming, web and multi-media
- ✧ Printing and Graphic Arts: Involving businesses, organisations and government that: design and create images and artefacts, prepare images for printing, reproduction of artefacts, post-press and finalising
- ✧ Education: workplace assessors, industry trainers

Many units in IBSA Training Packages are imported into Training Packages of other sectors. The E-scan 2009 reports that over 80% of Training Packages import units from the IBSA Training Packages.

This wide coverage means that IBSA Training Packages are affected by changes in conditions that affect a range of other sectors. There continue to be more participants enrolled in IBSA Training Packages than in any other skills council sector.

What follow are a variety of examples to indicate how different Training Packages developed by IBSA have responded to changing circumstances.

Innovation

In its 'Blueprint for Innovation' IBSA underscores its commitment to 'fostering the skills required to foster innovation, boost business profitability and build individual and organisational capability' (IBSA 2009). This blueprint grew out of the results of the IBSA National Search Conference in 2007 aimed at getting a group of about 100 invited experts to discuss issues around creativity, innovation and talent development. The Blueprint identifies four major areas for action: context, culture, connections, and capability, and how IBSA will work with partners to further the agenda for innovation and workforce development.

IBSA has developed 6 units in innovation, 7 units in creativity, and 15 units in design and is applying its efforts to incorporate these into a suite of cross-industry units, including problem-solving and creative thinking. In 2007 the ISC undertook extensive consultations and found that, although people were satisfied with the innovation units created, there was no support for a new qualification. The ISC is currently introducing units in innovation into the Telecommunications, Printing, Financial Services and Cultural and Related Industries (Music) Training Packages). The ISC is currently in the process of developing advice to assist trainers to embed innovation skills development into their training methodology.

IBSA has also received a grant of \$180 000 from the government to develop an innovation framework.

ICT02 Telecommunications Training Package

The area of telecommunications which sometimes is forgotten in many discussions of information and communication technology (ICT) is a growth area for skilling and upskilling. The Telecommunications Training Package covers a wide range of occupational outcomes (including electricians, cablers, field engineers, and system and network engineers) As the area becomes more specialised, it will be important to further define the occupations. The ISC is currently examining issues related to the visibility of occupations that are in the digital economy area (including broadcast technologists). This occupation requires multiple skill sets and is key to changes required under the National Broadband roll-out.

There are continuous changes in the telecommunications area that have to be reflected in the Training Package. New areas of work include ‘digital reception’, which requires new qualifications and new units of competency, and ‘radio communications’ which requires two new qualifications.

The ISC is also concerned about the currency of resources for the Telecommunications Training Package and is now updating the information. The ‘Digital Switch-over’ preparations involve the government task force developing an online test bank and a set of supporting training resources. The IBSA competencies (ICT02) are being used to develop resources.

There is also a convergence between IT qualifications and telecommunications qualifications, for example, cloud computing, which looks at applications from one remote site. Stakeholders have been consulted across states and territories and have asked them to outline the changes that are required.

If a major change is sought, this will result in a shift in the way qualifications are structured. Decisions will need to be made about core and elective units. If the core component is too large, then the number of electives may be restricted. The ISC aims to ensure that the ‘core’ is relevant to suit changing jobs. There is also a need to build OHS units around new areas like ‘optic fibres’ into the Training Packages. The ISC is now conducting workshops with stakeholders regarding the unit of competency, ‘optic fibres’. Another unit, ‘fibre to the home’, is also been considered.. ICT10 will become available later this year.

ICA05 Information and Communications Technology Training Package

E-security was introduced into the Information Technology Training Package (ICA05) in 2008, when radio frequency identification units were included. Feedback from stakeholders has alerted the ISC to an urgent need for change. A scoping exercise will be undertaken to anticipate what these changes will be.

There are no skill sets in the IT Training Package and the ISC envisages that there will major changes in these areas. The ISC delivers workshops to industry (including ACS, AIIA, sectoral committee and RTOs), and is involved in online discussion forums. It is also invited to make presentations at various forums, including practitioners’ forums. These forums are especially important in obtaining industry intelligence and discussing issues that are of concern.

The ISC has also been looking at accredited courses that can be dropped into the Training Package. The New South Wales accredited course Certificate IV in Telecommunication Networks has been incorporated into ICT 02.

FNS04 Financial Services Training Package

The Financial Services area is a highly regulated area, but occupations have not had any major changes. In the past the Training Package has taken a reactive role responding to changes as they

emerge. More recently it has been impacted by the Global Financial Crisis which has altered the regulatory environment. For example, the Australian Securities Industry Commission (ASIC) is looking to increase regulation through an 'Australian Credit Licence'. Those who want to sit for the licence will have to have a Training Package competency. This means they will have to do the course or get RPL for the competencies they already have. The Global Financial Crisis has also fuelled the creation of legislation for book-keepers, namely Certificate IV in Book-keeping and Certificate IV in Accounting.

The Financial Services Training package FNB99 was first endorsed in 1999 and reviewed in 2004 without any significant change. This became FNS04v1. In 2007 the package was reviewed and became FNS04v2. This saw the introduction of Certificate IV in Book-keeping and Certificate IV in Workers' Compensation. Currently the ISC is reviewing FNS04v2 to address new regulations and working closely with ASIC to develop units for credit competencies. At this stage there is no need to create something new but to bundle units together.

IBSA recognises that the drivers of change in financial services relate to the effects of the current Global Financial Crisis and concerns about ethical behaviour. The ISC is also looking at the area of financial markets (including bonds, securities), which has not had a qualification. In the scoping exercise the development of an accredited course was also considered to hasten delivery of the qualification. The ISC is now looking at incorporating this into the Training Package.

In New South Wales the Financial Services ITAB is trying to create a state accredited course on ethics, sustainability and innovation. However, there is a view that the Training Package already addresses these issues.

The next version of the Financial Services Training Package FNS10 is currently being reviewed by the National Quality Council.

BSB07 Business Services Training Package

In January 2009 IBSA added two new competency fields—intellectual property (eight units), and business continuity (three units)—to the Business Services Training Package. These changes were driven by requests from stakeholders (including IP Australia, the Commonwealth Attorney-General's Department, and the Australian Copyright Council). The Review of the BSBO7 package identified that there was a need to review the business continuity units. This resulted in the addition of two new skill sets (basic contact centre operations and design fundamentals). In late 2009 revised legal services qualifications were included.

Future developments include the review of the business governance qualifications specific to indigenous organisations and the suite of sales, marketing and advertising qualifications. Updates will be made to: project management units, higher-level management qualifications to incorporate Manager 2020 principles, occupational health and safety units to address COAG agreements to harmonise licensing regulations.

There are also plans to look at the need for units related to sustainability and lean office processes.

TAA04 and TAE10 Training Packages

The ISC is currently gathering feedback on the Certificate IV and the Diploma in Training and Assessment from the Training and Assessment (TAA04) Training Package. A model certificate IV is currently being developed with fewer units. Skill sets are also being introduced (for example, e-learning).

Training and educator qualifications

The recently endorsed TAE Training and Education Training Package includes a number of qualifications with an educational dimension moved from BSB07, including those relating to international education and management of learning in institutions and in enterprises. The new package also includes two high level LL&N qualifications, designed for VET professionals working in a number of contexts.

In the future, IBSA is looking at qualifications which may be seen as professional development instruments for teachers and educators working in schools and or higher education institutions.

ICP05 Printing and Graphic Arts Training Package

There have been few changes to the Printing and Graphic Arts Training Package. However, the major change has been the incorporation of new digital applications, including wide-format digital printing.

Cultural and related industries Training Packages

The Music Training Package (CUS09) includes skills in IT, digital skills, management and business. The Entertainment Training Package (CUE03) deals with staging and theatre skills, including technical and lighting skills, dance, puppetry, circus arts, visual arts and crafts and design. The Training Package was updated in 2008 with new cross-industry qualifications to cover screen and entertainment industries. The Visual Arts, Craft and Design Training Package (CUV03) introduced a Diploma in Photo-imaging and an Advanced Diploma of Creative Product Development in early 2008. Gaps in higher level qualifications in graphic design, visual arts and ceramics are currently being scoped. The Screen and Media Training Package (CUF07) is the renamed successor to CUF01 Film TV, Radio and Multimedia Training Package. CUF01 was reviewed and rewritten in 2007 to address gaps and currency issues brought about by digital technology changes. CUF07 now draws from a wider array of skill sets (including IT, Creative, Financial Services). There has been a push for professionalisation of these occupations (including in business and games development). The ISC has had to respond to emerging areas. The Museums and Libraries Training Package (CUL04) has had no significant push for change in the area of knowledge management and library technician qualifications. The issue is how to deal with volunteerism. However, the package will be updated to reflect convergences of technologies, international communications protocols and flexible web-based services. This new package will be available in 2011.

Continuous improvement plan

The ISC is also currently implementing a continuous improvement approach to examining its practices in order to improve its ability to keep currency and reflect demand. A Continuous Improvement Plan sets out the projects that will be focussed on for 2010-2011. These projects are organised under two streams of activity —individual training packages, and cross-industry training package work and clients and stakeholder support projects. These two streams of activity comprise the following projects under the following clusters of projects:

- ✧ Commencement of significant new work (BSB07 Customer Contact, CUL04 Museum, Library & Information Services)
- ✧ Top-up of development stage funds for work already underway (ICA05)
- ✧ Cross-Training Package compliance work (OH&S)
- ✧ Work on slimmed down units and companion volumes for all Training Packages

- ✧ Progression of Stage 2 content development projects based on earlier scoping reviews (TAA04 Diploma, higher level qualifications and articulation framework)
- ✧ Recognition of government imperatives (focus on careers and learners, indigenous and social inclusion agenda)
- ✧ Servicing IBSA's Training Package clients
- ✧ Engaging and servicing key stakeholder groups
- ✧ Implementation support activities and professional development for newly endorsed Training Packages.

IBSA, in line with other ISCs, has an issues register which can be used to obtain feedback on nominal hours, durations, and funding. This information can be relayed to state training authorities.

A 'project network' has been established to examine the various Training Packages. Its role is to raise issues regarding more products and services to provide good support to industry and to RTOs. The commercial team is responsible for the selling and raising of revenue through products and services. This also includes running pilot programs and testing services. An online bookstore is also used to on-sell the products of other organisations.

The ISC is now generating IBSA resources that are developed by external consultants. These resources include learner guides, facilitator guides, assessments, and RPL tools. Money to develop these resources comes from the ISC core grant. This is used for Training Package maintenance and update. RTO feedback indicates that RTOs are hungry for more resources. Complementary resources for BSB 07 and TAA 04 are in high demand. There is a specific team devoted to the production of resources for these two Training Packages. Now the ISC wants to expand this type of activity to other Training Packages, including the Financial Services and Information and Communications Technology.

The ISC is acutely aware that the Training Package must reflect what industry wants; however, this understanding can only be made more meaningful if there are resources to help industry meet this need. This means that Training Packages need to be written in such a way that they can be used as job descriptions in industry. Nevertheless, the primary market for ISC resources is RTOs, whose core business is the provision of training and qualifications.

Future challenges for the ISC

Emerging challenges for the ISC relate to Training Package design. Training Packages need flexibility so that people are able to undertake units from other Training Packages. Other challenges relate to volunteerism, portfolio occupations, and blended occupations. A great deal of contextualisation is required for occupations, which can be located in divergent industries.

Another challenge relates to the issue of completion rates. There are many reasons why people do not complete. In addition, there is a great deal of hidden training effort that is not captured by national reporting systems. The ISC is currently undertaking pieces of applied research so that they get a better handle on the target audience and what they require. Not everyone is an entry-level worker. What is also required is a mix of metrics.

Future developments will be centred on reducing the duplication in qualifications in Training Packages. To this end a bank of units that deal with generic-type skills and knowledge and which can be more finely tuned to the needs of different sectors would be beneficial. There is a view that it is at the RTO level that a lot of the contextualisation should happen. There is also a view that people want to keep their own codes. This is because historically units are funded differently for different sectors, even if they are the same unit. For example, a unit dealing with communication

will be funded differently for qualifications in electro-technology than for qualifications in information and communications technology.

IBSA is increasingly becoming more involved in providing advice for policymakers. This development is perceived by the ISC as a 'double edged sword'. It is good to be involved in these ways, but it is also resource-intensive.

ISCs will also be increasingly measured by outcomes, impact and influence. If this is the case, then they will have also to increase their involvement in other parts of the system where implementation occurs. Another issue concerns the ability of STAs to be responsive to ISC initiatives. If ISCs are to influence the way their Training Packages are used, there will have to be closer connections between Training Package developers and regulators. In this way the ISC can help to decrease the types of problems experienced by RTOs. ISCs have a state advisory structure which includes representatives from national RTOs, the state training authority, and state ITABs.

The ISC is seen as a voice for industry, but it is also immersed in issues related to federal government funding, RTO implementation and jurisdictional decisions. Over the next 12 months the focus is on creating a more robust database. This will also help in developing a more robust environmental scan.

State and territory decisions about levels of qualifications affect how IBSA qualifications are implemented locally. IBSA is keen to get national consistency. IBSA industry managers are spending a great deal of time negotiating with STAs and government funding bodies about industry advisory arrangements, state lists for Productivity Places, nominal hours, and program duration.

In 2008 the ISC turned its attention to the Productivity Places Program, workforce development and an environmental scan. In 2004–06 the ISC commenced nine projects. New spaces for ISCs include employment research, labour market analysis, and job descriptions. This means that the ISC is looking more closely at the type of people who use the various packages (for example, young entry-level students will be different from existing workers). There is a positive mood for researching demand for Training Package qualifications and for evaluating the outcomes. Industry peak bodies are now taking ownership of these areas.

Sustainability and climate change

The focus on climate change has also led to ISCs having to be attuned to sustainability and environmental issues. Today BSB07 has three generic units dealing with sustainability. Each Training Package addresses sustainability in a different way. Now the ISC will run a 'green ruler' over these to make sure that they all refer to sustainability.

For example the telecommunications package has units devoted to recycling and handling lead. These have been mainly aimed at knowledge required for occupational health and safety and keeping workers safe rather than saving the environment. In the ICT Training Package the ISC is looking at stand-alone units. In Financial Services the aim is to look at cost-cutting, minimising waste and occupational health and safety. Now there is a need to incorporate carbon trading into the Training Package FNS04.

In the Continuous Improvement Plan 07–010 the ISC is looking at how to speed up the incorporation of three units across the Training Packages and whether they will be expanded.

The ISC is also looking at its internal processes, including consultations, and is keen to ensure that it uses processes which suit different stakeholders. To this end it is investigating the use of twitters, wikis and other ways that might be considered to be smarter vehicles for acquiring required feedback.

Manufacturing Skills Australia

The sectors covered by Manufacturing Skills Australia (MSA) comprise: aero-skills, furnishing, textiles, clothing and footwear, metal and engineering, process manufacturing, chemical, hydrocarbons and refining, plastics, rubber and cable-making, manufactured mineral products and laboratory operations. Manufacturing industries comprise around 75 000 businesses, employ about a million workers, contribute nearly 10% of gross domestic product and operate in an arena of rapid and continual technological change and strong competition from international competitors. The current financial crisis may affect the survival of those enterprises with close linkages to international companies experiencing economic distress.

What follow are a variety of examples to indicate how different Training Packages developed by MSA have responded to changing circumstances.

MSA07 Competitive Manufacturing Training Package (formerly MCM04)

This Training Package grew out of work undertaken by the Foundation for Australian Manufacturing Excellence. In 1999 the Australian National Training Authority (ANTA) provided funding to five national ITABs to see how training qualifications could be developed. These included the following ITABs: MERS, Manufacturing Learning Australia (process manufacturing), Food, Automotive Training and Light Manufacturing.

In 2004 the first Competitive Manufacturing Training Package was endorsed. It focused on the art/science of manufacturing, processes in manufacturing, and lean manufacturing (originated in USA in 1920s and Japanese after the Second World War). The key principles of lean manufacturing are based on understanding the needs of customers and streamlining the production chain so that only the processes and skills that contribute to the achievement of these needs are kept, while extraneous processes stripped out. Although training per se does not add to the quality of the end product, it is considered to be an acceptable waste because it can help to build skills. The ISC wanted to ensure that these 'lean manufacturing' skills and knowledge for workers were provided through the public VET system. Prior to this consultants provided this training.

A national community of practice of RTOs was created to support the implementation of the Competitive Manufacturing Training Package. This allowed for professional development and collaboration on resources. From 2003 onwards there was a shift towards higher-level skills development and a focus on developing new training pathways for technicians. The results of research undertaken by the Australian Industry Group indicated increased demand for more skills and the need to attract recruits to the manufacturing industry. Skill shortages in the manufacturing area as well as lack of interest from young people were the key drivers.

Technology cadetships and qualifications to suit these were created for technicians (including, designers, planners, specialist draughtsmen). Qualifications included certificate IIIs up to advanced diplomas. These cadetships suited the new apprenticeship pathways (including non-destructive testing, laboratory operations and materials testing) and opened up eligibility for government incentives for employers and RTOs involved in provision. The Australian Industry Group and the Australian Manufacturing Workers' Union endorsed a new industrial award. These qualifications were then put into the Manufacturing award as technology cadetships. In addition, there was also an attempt to have a new subject introduced into Years 11 and 12 curriculum that would carry higher scores so that students could count these towards their university entrance scores. Such a course was to be delivered by schools in conjunction with local industries. The aim was to expose students (especially those with higher academic ability) to consider manufacturing as an option.

The ISC consulted with the state and territory boards of studies and asked them to consider attaching higher scores to these subjects so that these could be used for university entrance. South

Australia disagreed about the scores that such a course would carry. The course 'Manufacturing Studies and Practice' was implemented in Tasmania. Queensland was interested at first but this interest waned. In addition, a new school-based qualification was developed. This was a certificate II qualification in Manufacturing Technology.

Rationalising the Training Package

The 'warehouse' Manufacturing Training Package (MSA07) grew out of a special interest in amalgamating the various manufacturing Training Packages into one, as a way of reducing overlap and breaking down silos between the different sectors. The aim also was to identify units that were common to all and in so doing reduce the need for importing units between Training Packages. The ISC was also keen to prepare for the new training.gov.au database so that qualifications could be sorted into different volumes by sector.

Future development

The ISC believes that there will continue to be substantial uptake of its units of competency from its Competitive Manufacturing qualifications in publicly funded training, especially those that relate to the principles of competitive manufacturing and the technical skills required. This includes 5S training. The 5S System refers to principles based on the Japanese philosophy (reflected in the terms Seiri, Seiton, Seiso, Seiketsu, and Shitsuke). These words refer in turn to principles and processes for sorting, setting in order, shining, standardising, and sustaining. The main aim is to streamline operations in a production environment to create time efficiency and to ensure that waste is eliminated and productivity improved. Practical examples of this system in action include shadow boards for tools, resources stored in a particular location and just-in-time production and delivery to clients.

PMA 08 Chemical Hydro Carbons and Refining Training Package

There were no recognised VET qualifications in this sector prior to the advent of the Training Package. On 25 September 1998 there was a malfunction in the heat exchanger in Victoria's Longford Gas plant. This caused major fires throughout the plant, and caused two fatalities and eight injuries. This incident affected domestic and commercial gas supply to all of Victoria and some parts of New South Wales and South Australia.

This event had a major impact on the need for chemical and hydrocarbons operations plant workers to be formally trained. Although there were some standards for compliance (for example, occupational health and safety), there were no formal courses. Most chemical operations workers undertook their occupational health and safety training via in-house courses.

After the Longford disaster the Training Package for this sector was introduced. Most of the effort in identifying and developing units of competency took place at this time. Units were written around skill outcomes and in language that can be easily adapted to include the introduction of new technology. Generally these deal with how to prevent and manage internal incidents and how to manage public relations. This means that processes must be in place to prevent an event from occurring and containing an event that has occurred in an acceptable incident response time and before it becomes a public safety issue. There must also be public relations processes for dealing with the community, in the event of a potential disaster.

The initial Training Package was developed to focus on the majority of skills required. As the years have gone by extra work has been undertaken to cover plug gaps. What has happened is that additions have been made to the scope, in terms of covering more and more people not previously covered. For a number of years there was low uptake in these Training Package qualifications and there is a view that companies were using training for workplace bargaining.

In 2004, 20 new support electives were included to cover on/offshore and major hazard facility incident response requirements. This necessitated the inclusion of three public safety units and six occupational health and safety units. In 2007 there were an additional nine new operations electives for the area of aluminium smelting.

In 2008 the name was changed from Chemical, Hydrocarbons and Oil Refining Training Package to Chemical, Hydro-Carbons and Refining Training Package. This change was driven by the need to reflect the expanded coverage of the package. It now covers aluminium smelting, alumina refining, minerals processing and surface coatings (for example, paint manufacture). There was also a rationalisation of units across the three process manufacturing packages. At the same time there was a removal of production support certificates and an incorporation of these into MSA 07 and shared by process manufacturing). The units of the package were updated and key competencies were replaced by employability skills. Skills sets addressing safety and compliance were also incorporated. A new qualification (the Vocational Graduate Certificate in Surface Coating Technology) was also added. Units on guideline sustainability were imported from the Competitive Manufacturing Training Package.

During the last two or three years the ISC has focused on specialist areas. Changes have also been introduced in response to fatalities and injuries experienced in the installation of diesel and petrol tanks. The coroner has asked the industry to address skills for maintenance workers and installers. These are yet to be covered by the Training Package qualifications and will need to deal with a mixture of plumbing and electrical competencies in hazardous environments. The ISC has offered to undertake a job analysis to identify skills and map them to the existing competency, find gaps and plug these gaps. As yet, the ISC is not sure whether the resulting units will form a qualification or a skill set.

Fibre composites technology used in the construction of bridge beams, walers for use in marinas and floating walkways, ridge girders, cross bars on power poles, the shell of aircrafts, trains and railway sleepers and trusses, and other architectural applications. Currently, there is no ANZSCO classifications to cover a fibre composites tradesperson, even though workers currently exist who require the technical skills and knowledge to span a range of areas for production and repair work. The identification of a new occupation at trade level to deal with these operations will also need to transcend separate industry sectors (including building and construction, aviation, and marine industries).

Technology cadetships

MSA has also introduced technology cadetships for structural steel detailers. These are draughtspersons who do technical drafting for steel used in metal structures. In Victoria this technician (called a formal specifier) has formal legislative responsibility. In other states this task is done by a mechanical or civil engineer. MSA has developed a new unit of competency to use with existing units of competency to lead to a new qualification

Surface Cleaning and Coating

Originally the MSA Training Packages contained just a few Units of Competency for Surface Preparation and Coating Applications, today the ISC is looking to develop a new qualification for workers who are working with cleaning and coating structures that are at risk of corrosion due to their exposure to the elements (for example, structural steel in ships, pipelines, oil rigs, containers that are to be filled with chemicals). To date these workers have mostly had qualifications in other areas and have required some up-skilling to deal with asset maintenance.

Architectural hardware

Qualifications have also been required for those who must specify architectural hardware. These workers must synthesise the architectural requirements in terms of regulations that apply. The drivers of formal training for these occupations have been industry practitioners who have been aware of the ageing workforce demographics and who realise that the industry will lose the skills and knowledge for these areas when the older workers who are currently doing such jobs retire and leave the industry.

Design of kitchens and bathrooms

There have also been specialisations developed for individuals who will customise the ideas and concepts to customer needs. These individuals must know the building and health regulations and the practicality and feasibility of the design that the customer desires.

Future developments

Existing units will continue to be reviewed and refined to meet the emerging needs for processing of coal seam gas.

AUR 05 Automotive Industry Retail Service and Repair Training Package

The ISC has started work on the review of AUR 05. It has engaged consultants to conduct national consultations and has developed a continuous improvement plan. This plan pays attention to recent changes in automotive manufacture, maintenance and repair, including hybrid drive vehicles, alternative fuels, new materials in painting, and panelling. It also includes integration and merging of technologies in engine management, transmission and suspension in passenger and commercial vehicles, earthmoving and mining equipment, remote controlled vehicles, and self-drive vehicles.

MEM 05 Metal and Engineering Training Package

The Metal and Engineering Training Package has its genesis in the award restructuring of the late 1980s, which saw the amalgamations of narrow occupations into broad occupational groupings, the emergence of concepts of multi-skilling to replace strict demarcations, and the concept of payment for skills used rather than skills held. Qualification structures were aligned to jobs.

In February 2003 the MEM 98 Training Package was revised to include changes in points weightings to meet the needs of industrial parties for job classifications. These new units were aimed at meeting demands created by changes in work organisation and practices as well as new technology. At the end of that year the MEM 98 Training Package incorporated five new qualifications in the areas of marine craft construction, boating services and jewellery manufacture. Workers in the marine industry had not been covered by a Training Package and the marine industry sought a new home with MSA. The jewellery qualification was developed to replace previous courses. A change in the Certificate IV Engineering title was made to reflect the use of the qualification. In 2005 the major review of the Training Package resulted in MEM05 and incorporated changes to units to reflect improvements, expand coverage and changes in technology and higher-level qualifications (diploma and advanced diplomas). There were also changes to the packaging rules for all qualifications to establish mandatory units without points weighting. In 2006 codes were changed to enable information to be uploaded on the National Training Information System database. In 2008 new units were incorporated to address greenhouse gas licensing requirements.

In 2009 the ISC is commencing the review of the Training Package by looking at new forms of work organisation and practice so as to provide better advice to industry in relation to the selection

and choice of units. There are also moves to revise units at diploma and advanced diploma levels to meet the RTO and Engineers Australia expectations for having more detailed lists of required knowledge incorporated into the package.

The ISC is planning the incorporation of new vocational graduate certificate qualifications, to meet the needs of high-level jobs, and new units to address major changes in technology. New pre-apprenticeship qualifications to replace the many courses that exist for pre-apprentices are also planned. Moves to harmonise state and territory regulatory and licensing systems will also result in changes to relevant qualifications and units.

Continuous improvement processes

In 2008 a new process for endorsement was introduced, and it is felt that it has made a significant improvement in the process for endorsement. It has shortened the cycle and improved opportunities for ISCs to become more responsive to industry. The real blockages are felt to occur after the endorsement, with state and territory implementation. For example, some change may be endorsed nationally but it is up to each jurisdiction to make it happen.

Skills-DMC (Drilling, Mining and Coal)

Skills DMC covers the resources and infrastructure industries including: civil infrastructure, metalliferous mining, coal mining, drilling and construction materials. It estimates that these industries employ about 530 000 workers across Australia. Employment across the sectors covers a wide range of occupations. The sector is characterised by large, medium, small and micro businesses. It employs graduates from tertiary and vocational education in professional and technician and trade occupations, as well as those from secondary education. More recently there has been an influx of workers with overseas trade and professional qualifications to fill skill shortages produced by the 2004-2007 resources boom.

Although sectors are characterised by similar processes, work environments, remote locations and high capital equipment costs, there are also substantial differences in products and systems. Similarities between the sectors mean that there are a range of skills that are common to all. These include skills for managers and supervisors, professionals, technicians, trades and plant operators. Nevertheless, there are also unique skills that pertain to specific modes of production (for example, for long-wall coal mining and highway construction).

Skills DMC is keen to ensure that, when enterprises or individuals want to know something about workforce planning and the VET system in the resources and infrastructure sectors, it is the first port of call. Skills DMC should be recognised as the spokesmen for VET in the states and territories. It also sees its role as 'brokering or managing and coordinating 'delivery' free of charge.

What follow are a variety of examples to indicate how different Training Packages developed by Skills-DMC have responded to changing circumstances.

Training packages

Skills-DMC commenced operation with five Training Packages (Metalliferous Mining, Coal Mining, Extractive Industries, Drilling and Civil Construction). Today it has reduced duplication of both units of competency and information for providers and has undertaken a major rationalisation process to develop one Training Package to deal with the competencies required for the five industry sectors. Government imperatives for rationalisation and industry requests have motivated the rationalisation process. In addition, strong commonalities between the skills required by workers in coal mining, metalliferous mining and extractive industries meant that competencies were being drawn from the same pool.

A desktop analysis helped to identify general and technical fields of competence that were applicable to all sectors, technical fields of competence applicable to more than one sector but not all sectors (see table 1) and technical fields applicable to a single sector (civil construction, coal mining, metalliferous mining, drilling, extractive).

Table B1 Results of desktop analysis of general and technical skills applicable to all Skills DMC Training Packages

General: applicable to all sectors		Technical: applicable to all sectors
Risk management	Leadership and teamwork	Blast hole drilling
Governance and compliance	Business effectiveness	Blasting
OH&S	Financial administration and management	Service and maintenance
Environment	Information management	Load handling
Quality	Customer and community relations	Vehicle operations
Communication	Project management	Sampling, testing, data processing and recording
	Training and assessment	Emergency response and rescue

Source: Skills DMC unpublished data.

In moving forward the ISC needed to decide on some key principles of rationalisation. First it had to ensure that the outcomes required by every sector were met. Second, a unit would not be created if it meant an additional impost on a specific sector. If a sector required extra knowledge or skill, then a unit of competency was only created if there was an existing or new skill area to be addressed. For example, coal seam gas was a new technology that was originally only in the drilling sector; however, now that other sectors are tapping into coal seam gas, this required the creation of a new unit of competency.

Some gaps related to road design were identified for the civil construction design sector. Although shot firing had all the technical units of competency required, it did not have a unit which addressed ‘Supervision blast hole drilling operations’. The ‘Emergency response preparedness unit’ was introduced to address the need to for applying and monitoring underground metalliferous mining and repair.

Dealing with regulators

Skills-DMC believes that a unit of competency will not be framed around what a regulator requires; rather, it is the structure of the qualifications which will reflect the regulator’s requirements. For example, in developing the Certificate IV Open Cut Examiner, the ISC consulted with the industry and the regulator and constructed a skill set associated with the shot firing ticket. The regulator may either accept the qualification in total and issue the ticket or require some additional units of competency to satisfy jurisdictional and regulatory requirements.

Dealing with prerequisites

Skills DMC will not import a unit with prerequisites embedded within it unless it is mandated by the regulator. For example, the regulator has mandated that the Diploma of Mining: Electrical Engineering needs to use units of competency from the Electrotechnology area.

Unless a prerequisite is mandated by the regulator, then Skills DMC aims to have all necessary requirements spelled out in the underpinning knowledge component.

Workforce planning and development

Skills-DMC has decided to provide enterprises within its industry sectors with much closer assistance in workforce planning and development. It is a strong view held by the CEO and his staff that it is at the enterprise level that ISCs can make a strong impact on improving workforce capability through training. The ISC has developed its workforce force planning tool: Future

Workforce Manager and training needs analysis tool, the Skills Maximiser. Although implementation of these approaches with enterprises is still in its early stages, the ISC has already worked closely with a number of enterprises to identify their workforce needs and advise on training requirements.

The process

Skills-DMC Skills Advisors will start off the workforce planning and development process by providing enterprises with information about the process and about how the ISC can help them to improve workforce capability and productivity through a systematic system of workforce planning and development. The key issues in any workforce development plan are to improve productivity, maintain safety standards and ensure quality products.

Once the enterprise has agreed to be involved, a Skills DMC advisor will visit the enterprise and work closely with the manager who is identified by the company as being the most appropriate to engage in the exercise. Generally, these managers are responsible for production, human resources or training.

This exercise uses information from the human resources database, up-to-date production outputs from relevant operations, current training programs and future requirements. The workforce planning tool allows the Skills-DMC advisor to analyse the information, come up with projections of future requirements, and produce a report that can be used by the company to understand its current situation and the future challenges. The report outlines the findings of the analysis which looks at:

- ✧ the current production and economic environment and its challenges for the industry
- ✧ recruitment, retention and turnover issues
- ✧ existing workforce training and development plans in place
- ✧ the size of the gap in total employment numbers if no workforce development planning and recruitment were to take place
- ✧ a comparison of the age of its workforce with national figures on the age profile of the mining industry workforce.

A training needs analysis is also conducted using the Skills Maximiser tool to profile the competencies that are required for different positions, the number of employees requiring the competency, the numbers who have relevant qualifications and the percentage who do not have these qualifications. The report ends with some conclusions and recommendations which may include a training plan.

Although in many instances enterprises are not aware of the Training Package, a mapping exercise against the units of competency enables the Skills-DMC advisor to provide a structured analysis to identify gaps in skills. The units of competency Training Package also provide a framework for national recognition of existing skills.

The RII09 Training Package has made this process much easier because there are competencies that are common to different industry sectors in the Training Package for that particular occupation mapping exercise

Using Productivity Places Program to fund the delivery of training

Once the organisation has signed off the Workforce Planning and Development Report, the Skills-DMC advisor will then help the enterprise to purchase training for new entrants and existing workers. It will help the organisation identify an appropriate RTO and then assist the organisation to monitor the progress of training and evaluate the outcomes.

Issue register

The issues register allows stakeholders to log any issues that they want to bring to the attention of the ISC. The ISC will then batch these as a group and deal with them through the continuous improvement process.

Future developments

Although 'trenchless technology' has been around since the 2003 Training Package, it is felt that the two major areas for the future are remote mining and sustainability. Remote mining is a long-term goal and the large mining companies like Rio Tinto already have high levels of technology. Rio Tinto is undertaking more research in the area.

Currently units of competency in the RII 09 package are mainly aimed at the reduction of the carbon footprint and prevention of pollution, preserving maintenance level of consumption, improving the bottom line and saving money. Increasingly, the focus will be on reducing greenhouse gasses and emissions when these elements have a commercial outcome.

Skills-DMC is currently having discussions with the Department of Further Education, Employment and Technology in South Australia about the need to ensure that qualifications which require a high level of theory and knowledge follow a dual pathway. As a result, the Diploma of Geo-Science (an accredited course in South Australia), might be suitable as a qualification in the Training Package but have little relevance to a job. In its scoping exercise Skills-DMC consulted with SANTOS, a large mining company. SANTOS wanted to keep the course but the regulator would not accept this, despite the recommendation by TAFE to keep the course as an accredited course. Skills-DMC is currently creating a national qualification that is based on the qualification being awarded once the student has spent time on the job.

The resources boom uncovered widespread skill shortages in the mining industry. One response was to bring in overseas qualified tradesmen. However, this was not always successful. For example, mechanical fitters trained in the Philippines needed extra training to be able to work in the Australian mining sector. In fact all overseas trained personnel are identified as a 'training need' and require training.

The creation of accelerated apprenticeships has also been an attempt to fill skill shortages. However, some of these approaches have not worked out, as electrical apprentices who were working in the mining industry also had to satisfy electrical competencies for the residential sector. This was felt by some to place another impost on mining companies. In this respect some industry stakeholders are reported to prefer fully trained apprentices.

Electro-communications and Energy Utilities Industry ISC (Ee-OZ Training Standards)

EE-Oz Training Standards is the Australian Government declared Industry Skills Council for the Australian ElectroComms and EnergyUtilities Industries. EE-Oz Training Standards has primary responsibility for developing and maintaining Training Packages for the industries under its coverage. These include the Electrotechnology, Gas, Electricity Supply Industry – Transmission, Distribution and Rail, and the Electricity Supply Industry – Generation Training Packages.

EE-Oz continues to respond to the dynamic technical, regulatory and economic challenges faced by the energy sector industries through the continuous improvement of Training Package qualifications and competency standards and the identification of new skill sets.

What follow are a variety of examples to indicate how different Training Packages developed by Ee-OZ have responded to changing circumstances.

UWW07 Electro-technology Training Package

In response to changes to the Renewable Energy Target Legislation, a new qualification for photovoltaic systems: UEE42009 Certificate IV in Electrical – Photovoltaic Systems was endorsed by NQC in June 2009.

This included a new unit for photovoltaic installation—UEENEEK048A Install, configure and commission grid connected photovoltaic power systems

Modifications were also made to the following units:

- ✧ UEENEEK025C Solve basic problems in photovoltaic energy apparatus
- ✧ UEENEEK035C Design grid connected power supply systems
- ✧ UEENEEG071C Install and setup interval metering

These units were included in a suite of post-trade skill sets for:

- ✧ Installer of grid connected photovoltaic systems,
- ✧ Designer of grid connected photovoltaic systems
- ✧ Designer and Installer of grid connected photovoltaic systems.

These qualifications, units and modification to units and skill sets have been developed to address the requirements for commercial and domestic installations to meet the provisions of new Australian Government renewable energy initiatives and the requirements for Clean Energy Council accreditation for installers and/or designers of grid-connected solar systems.

In April 2010 the NQC endorsed version 3 of UEE07 Electro-technology Training Packages which included significant updates to existing qualifications and competencies and the addition of new competencies.

Updates include:

- ✧ 15 new qualifications
- ✧ 50 revised qualifications
- ✧ 89 new competency standard units
- ✧ 7 revised competency standard units
- ✧ 47 new imported units

As well as addressing ongoing technical and regulatory issues, these amendments target key areas of industry development including:

- ✧ Hazardous Areas
- ✧ Natural refrigerants
- ✧ Energy Efficiency
- ✧ Remote Areas Energy supply
- ✧ Instrumentation and Industrial Control

UET09 Transmission, Distribution and Rail Training Package

In June 2009 there were revisions to UET50109 Diploma of ESI – Power Systems, and UET60109 Advanced Diploma of ESI – Power Systems qualifications. These revisions were to reflect advancements in work practice and workforce development and changing technology.

In December 2009 UET09 was updated to Version 2 to include new competency standards addressing Refresher Training requirements for ESI employees required to access Electricity Supply Industry (ESI) network assets.

This work was carried out in response to need identified following the disastrous Victorian Bushfires in 2009 and other natural disasters with the support of the Ministerial Council on Energy (COAG) and the in accordance a national protocol agreed by the CEO of all Electricity Supply companies operating in Australia.

These units were also included in identified Skill Sets to provide access to this training ESI Employee and contractors.

UEG06 Gas Training Package

The UEG06 Gas Training Package is undergoing review to update the competencies and qualifications to reflect current and future skill requirements.

In addition to its increasing importance as an export commodity, gas has been identified as a key “transition fuel” in the move to a low carbon economy.

The high level of investment and expansion of the Gas Industry sector in 2009-2010 will result in new qualifications reflecting specific needs in transmission and distribution of:

- ✧ LPG
- ✧ Natural Gas
- ✧ Coal Seam Gas

Gas is also rapidly becoming an important fuel for new thermal power stations resulting increased synergies with the generation sector.

UEP06 Generation Training Package

EE-Oz has identified and developed a range of new qualifications and competencies for the generation sector in key emerging generation technologies including:

- ✧ Wind Turbines
- ✧ Solar Farms

- ✧ Fuel cells
- ✧ Co-generation systems
- ✧ Hybrid systems

The demand for skills in these emerging industry sectors is rising rapidly as the industry as the national electricity market reforms come into place and the nation moves toward reducing its carbon footprint.

Meeting future skill needs

Ee-Oz aims to meet future skill needs in the following ways.

NQC Training Package Policy

In 2010 EE-Oz will revise all endorsed, non-regulated qualifications in its suite of Training Packages to comply with the requirements of the National Quality Council's Requirements for qualification Packaging Rules. These revised rules will redesign qualification to establish a more uniform approach within and between industry sectors and enhance the flexibility of qualifications.

Green Skills in Training Package

In line with Australian Government policy EE-Oz will by December 2010 include appropriate endorsed Green Skill units in all qualifications to ensure that participants have appropriate technical and personal skills for sustainability. This will mean the development of a number of new competency standards in both technical and personal sustainability skills for inclusion in the EE-Oz training Packages.

EE-Oz will continue to develop new units and qualifications, and review existing units and qualifications across all Training Packages to address issues of climate change, energy efficiency, sustainability and renewable energy. Ongoing developments will reflect changes in work practices relating to safety, regulatory requirements and outsourcing of labour.

Appendix C:

ISC response to meeting environmental sustainability needs

What follows are examples of selected units of competency dealing with issues of environmental sustainability for various ISCs. These are identified in the publication 'Environmental Sustainability: An Industry Response' (2009).

Agrifood ISC

- RTE4203A Implement a property improvement program
- RTE5524A Develop and implement sustainable land use
- RTE4603A Implement an irrigation related environmental protection program
- RTD2202A Conduct erosion and sedimentation control activities
- RTC2410A Treat weeds
- RTD4504A Monitor biodiversity
- RTD5003A Manage natural area restoration programs
- RTC5504A Develop a management plan for a designated area
- RTE4814A Provide information and referrals on environmentally responsible fertiliser and ameliorant use
- RTC4513A Supervise acid sulphate soil remediation and management projects
- RTD2502A Maintain wildlife habitat refuges
- RTD 3034A Implement revegetation works
- RTD3132A Survey pest animals
- RTD3205A Construct conservation earthworks
- RTD3212A Implement erosion control and sedimentation measures

Community Services and Health ISC

- HLTPOP216B Monitor and maintain septic or on-site systems
- HLTPOP217B Monitor and maintain sewerage or effluent systems
- HLTPOP218B Monitor and maintain water supply
- HLTPOP220B Monitor and maintain rubbish collection and disposal systems
- HLTPOP319B Conduct testing and interpretation of results of community water supply

Construction and Property Services ISC

- CPCBC4019A Apply sustainable building design principles to water management systems
- CPCBC4020A Build thermally efficient and sustainable structures
- CPCBC4021A Minimise waste on the building and construction site

CPCCPB3015A Install acoustic and thermal environmental protection systems
CPPMN4001A Develop workplace policy and procedures for sustainability
CPPCMN 4002A Implement and monitor environmentally sustainable work practices
PRMPFES43A Prevent ozone depleting substance and synthetic greenhouse gas emissions
PRMFES50A Monitor storage operations for ozone depleting substances and synthetic greenhouse gases
PRMW01B Conduct a waste management audit
PRMWM57A Develop landfill rehabilitation plan
CPPCMN3001A Participate in environmentally sustainable work practices
CPCSUS4001A Implement and monitor environment
CPCSUS5001A Develop workplace policies and procedures for sustainability
CPCCM1002A Work effectively and sustainably in the construction industry

Electro-comms and Energy Utilities ISC

UEENEEK012B Provide basic sustainable energy solutions for energy reduction in domestic premises
UEENEEK013B Apply sustainable energy practice in daily activities
UEENEEK 014B Promote sustainable energy practice in the community
UEENEEK032B Develop strategies to address sustainability issues
UETTDTRIS23A Implement and monitor environmental and sustainable energy management, policies and procedures
UEGNSG104A Comply with environmental policies and procedures
UEGNSG120A Manage gas system environmental compliance
UEPOPS246A Operate waste and contaminated water plant
UEPOPS325A Operate and monitor water quality control systems
UEENEEK042A Participate in environmentally sustainable work practices
UEENEEK045A Implement and monitor, policies and procedures for environmentally sustainable electro-technology work practice
UEPOPS356A Apply environmental and sustainable energy procedures
UETTDREL01A Apply environmental and sustainable energy procedures
UEPOPS356A Apply environmental and sustainable energy procedures
UEPOPS417A Monitor and implement environmental plans and procedures
UEPOPS504A Develop, implement and monitor environmental management systems

Government Skills Australia ISC

NWP101A Investigate sustainable water cycle management
NWP202B Apply environmental and licensing procedures
NWP315B Investigate and report breaches of water industry legislation
NWP706A Review and evaluate water and wastewater sustainability objectives
NWP707A Analyse and review water treatment plant technology
LGAGOVA410B Monitor council procedures to ensure compliance with relevant legislation

LGAEHR305A Present environmental health education information
LGAEHR W505B Implement strategies to minimise the impact of waste on the environment
LGALAND403A Operate waste transfer, collection station or landfill facility
LGALAND401A Apply the principles of ecologically sustainable development to council decisions
LGAPLEM606B Develop ecologically sustainable land management systems
LGAPLEM501A Achieve an efficient and sustainable use of natural resources
PSPSC1701A Create innovation and change through extension
PSPLAND506A Identify and manage contaminated sites
NWP301B Implement, monitor and coordinate environmental procedures
NWP401B Coordinate and monitor the application of environmental plans and procedures
NWP505B Implement and manage environmental management policies, plans, procedures and programs

Forestworks ISC

FPICOR2203A Follow environmental care procedures
FPICOR3201A Implement SHE policies and procedures (SHE: safety, health and environment)
FPIFGM4205A Monitor regeneration rates
FPIFGM5206A Develop a native forest regeneration plan
FPICOT5201A Implement sustainable forestry practices
FPICOR3203A Evaluate fire potential and prevention
FPICOR4201A Monitor SHE policies and procedures
FPICOR4202A Monitor and review forestry operations
FPIFGM4201A Implement a forest establishment plan
FPIFGM5202A Manage tending operations in a native forest
FPIHAR4204A Plan and coordinate fire salvage operations
FPIWPP3217A Process production effluent

Innovation and Business Services Australia (IBSA) ISC

BSBSUS201A Participate in environmentally sustainable work practices
BSBSUS301A Implement and monitor environmentally sustainable work practices
BSBSUS501A Develop workplace policy and procedures for sustainability
BSBSUS508A Build a virtual community
TAADES503B Research and design e-learning resources
TAADEL504B Develop and evaluate e-learning resources
TAADEL405B Coordinate and facilitate distance-based learning
TAADEL501B Facilitate e-learning
ICPSU222B Pack and dispatch solid waste
ICPSU323B Dispose of waste

Manufacturing Skills Australia ISC

MCMT272A Participate in environmentally sustainable work practices

MCMT472A Implement and monitor environmentally sustainable work practices

MCMT672A Develop workplace policy and procedures for sustainability

Skills DMC (Resources Industry and Infrastructure) ISC

MNCO1120A Establish waste and by-products management system

MNCO1121A Implement site waste and by-products management plan

MNCO1122A Apply and monitor site waste and by-products management plan

MNMMEN304A Take environmental samples and measurements

MNMMEN501A Develop site environmental policy

MNMMEN502A Undertake process or project environmental impact assessment

MNMMEN503A Implement mining operations environmental management system

MNMMEN505A Monitor and correct activities having impact on the environment

MNMMEN506A Review environmental management system performance

MNMMSM601A Establish and maintain the environmental management system

MNQOPS402A Apply site water management plan

MNQOPS403A Apply site plant and resource management plan

MNQOPS405A Supervise site rehabilitation operations

MNQOPS424A Apply site waste and by-products management plan

MNQOPS426A Supervise recycled materials operations

ISC

SISOOPS201A Minimise environmental impact

SISOOPS304A Plan for minimal environmental impact

SISOOPS506A Manage natural resources

SITTPPD004A Plan and implement minimal impact operations

SITTPPD006A Plan and develop ecologically sustainable tourism operations

SISOOPS202A Use and maintain a temporary overnight site

SIBBSPA001A Work in a spa therapies framework

SIFBGM006A Evaluate building and grounds maintenance and development needs

SITXENV001A Participate and monitor environmentally sustainable workplace practices

SITXENV002A Implement and monitor environmentally sustainable work practices

SITXENV003A Develop workplace policy and procedures for sustainability

Transport and Logistics ISC

TLIU707B Care for the environment (available to all certificate II level qualifications)

TLIU107B Implement and monitor environmental protection policies and procedures (available for all certificate IV qualifications)

TLI607B Conduct environmental audits (available to all diploma units).

Appendix D: Nationally accredited courses by field of studies and field of education

Table D1 Number of nationally accredited courses (excluding Training Packages) by state/territory and field of studies and field of education, 2000 and 2008^{(a), (b)}

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust
<i>2000^(c)</i>									
01 Land and marine resources, animal husbandry	112	84	54	50	87	33	20	10	384
02 Architecture, building	97	87	32	45	79	30	18	23	349
03 Arts, humanities and social sciences	180	108	44	73	155	25	25	48	588
04 Business, administration, economics	167	164	82	86	135	49	40	44	624
05 Education	26	16	20	8	16	8	6	4	96
06 Engineering, surveying	271	209	86	106	204	79	43	27	912
07 Health, community services	133	108	68	55	89	41	44	32	494
08 Law, legal studies	7	9	3	13	6	2	7	2	48
09 Science	82	35	21	14	57	19	7	9	217
10 Veterinary science, animal care	4	3	8	7	3			5	26
11 Services, hospitality, transportation	133	134	66	101	163	28	39	39	566
12 VET multi-field education	67	115	22	22	41	20	32	9	282
Total	1,279	1,072	506	580	1,035	334	281	252	4,586
<i>2008^(c)</i>									
01 - Natural and physical sciences	1	7	1	4	5	0	1	5	24
02 - Information technology	5	10	0	0	0	0	0	2	17
03 - Engineering and related technologies	72	46	34	31	48	8	3	9	219
04 - Architecture and building	22	20	20	11	38	3	7	9	102
05 - Agriculture, environmental and related studies	33	19	2	5	5	1	1	0	58
06 - Health	20	11	17	8	22	3	4	8	79
07 - Education	8	11	22	5	24	4	4	3	71
08 - Management and commerce	24	44	9	5	8	3	0	6	96
09 - Society and culture	61	19	22	21	29	5	7	30	156
10 - Creative arts	47	45	13	5	25	2	1	11	140
11 - Food, hospitality and personal services	0	2	3	2	1	1	0	1	10
12 - Mixed field programmes	56	66	61	31	47	22	19	15	190
Total	349	300	204	128	252	52	47	99	1,162

Notes: (a) A nationally accredited course can be delivered in more than one state. For this reason, the sum of state and territory data is greater than the Australia figure.

(b) The same course may have more than one field of education. Improved data quality processes have reduced this occurrence in more recent data collections.

(c) There is a break-in-series in field of education. Data for the 2000 year were based on the field of study classification while data for 2008 were based on the field of education classification.

Source: National VET Provider Collection, 2008.

Appendix E:

Skill sets by training packages

In this appendix we list skill sets identified in Training Packages. We do not include specific Enterprise Training Packages. We use public information available from on the ntis.gov.au website at the time of writing this report.

Table E1 Skill sets by Training Package

CPC08 Construction and Plumbing Services Integrated Framework

Undertake trade contracting
Lead a building, construction or plumbing and services team
Manage a complex building

RGR08 Racing

Greyhound race day attendant
Thoroughbred exercise rider
Harness track work driver
Thoroughbred fast work rider
Greyhound training operations
Harness or thoroughbred training operations
Enterprise workplace trainer (imported)
Approval to operate thoroughbred barrier attendant
Greyhound race club kennel attendant
Greyhound race club parade official
Harness or thoroughbred clerk of course
Greyhound clerk of scales
Greyhound lure driver
Harness mobile start driver
Racing licensing and registration clerk
Racing nominations and acceptance clerk
Racing photo finish operator
Racing timekeeper
Racing swab attendant
Race meeting farrier
Harness race starter
Thoroughbred race starter
Racing biological security officer
Harness or racing thoroughbred racing handicapper
Racing judge

MTM 07 Australian Meat Industry

Animal welfare officer

PM08 Chemical Hydrocarbons and Refining

Contractor induction
Confined space work team

Hot work observer
Offshore operator safety induction
Incident response team
Offshore incident response team
Incident response team leader
Incident response commander
Emergency centre team
Pipeline transmission
Workplace assessor
Offshore crane driver

PUA00 Public Safety

Combat fitness leader
Field kitchen assistant
Field kitchen manager
SES induction
SES First aid and safety
Air search observer
Basic tree operations
Basic rescue
Operations centre
Road accident rescue
Vertical Rescue

PSP04 Public Sector

Customer service
Foundation executive management
Basic procurement
Procurement delegation
Foundation procurement
Trade measurement inspection
Radiation environment safety
Radiation sealed sources safety
Radiation technician safety
Direct workplace emergency initial response
Weighbridge operations
Workplace relations information
Operate in customer contact environment
Prepare for workplace inspections
Workplace relations guidance
Workplace coaching
Workplace relations and investigation supervision
Writing in a politically sensitive context in government

RII09 Resources and Infrastructure

Leading hand
Rouseabout off shore oil and gas
Site health and safety
Mine surveying
Surface shot-firing
Underground shot-firing
Underground Shot-firing Metalliferous

SIF08 Funeral Services

Safe grave-digging

TAA04 Training and assessment

Assessor

Enterprise trainer

Enterprise trainer and assessor

TAE10 Training and Education

Assessor

Enterprise trainer

Enterprise trainer and assessor

Sustainable workplace supervision

TLI07 Transport and Logistics

Driver instructor

Road tunnel operator

International freight forwarding

Integrated logistics support practitioner

Logistics sustainment practitioner

Integrated logistics support inventory controller

Logistics inventory controller

Logistics configuration management

Integrated logistics support management

Logistics product management

Logistics executive management

Rail infrastructure induction

Track patrol

Track inspection

Track grinding

Track lubrication

Minor rail plant operation

Rail plant operation

Rail adjustment

Ultrasonic rail

Ultrasonic points and crossing testing

Aluminothermic welding

Flashbutt welding

Electric Track welding

Repairing concrete masonry structures

Repairing steel structures

Repairing timber structures

Installing transoms

Installing minor structures

Maintain bridge bearings

Turnout building

Turnout maintaining

Track protection coordination

Examining concrete masonry structures

Examining steel structures

Examining timber structures

Local government

Building certifiers and assessors
Local government compliance management
New entrants' induction

CPP07 Property Services

Conduct business access audits
Conduct outdoor access audits
Conduct transport access audit
Perform retail security operations
Perform cash in-transit operations
Perform monitoring centre operations
Conduct investigations
Use firearms and defensive tactics
Coordinate control room operations
Manage dogs for security functions
Conduct factual investigation
Conduct Surveillance
Provide biometrics consulting and advice
Coordinate investigative activities
Induction to spatial information services
Provide technical assistance with spatial data collection
Provide support in spatial field services
Perform basic spatial drafting
Provide technical assistance with field surveys
Perform spatial data collection and surveying
Analyse basis GIS data
Provide technical assistance with surveying
Perform applied engineering surveying
Collect and integrate spatial data
Design and develop spatial information projects
Implement best practice in spatial information projects
Provide technical assistance in spatial information systems development
Design spatial information systems
Prepare engineering survey drawings
Prepare mine survey drawings
Apply planning law to surveying
Manage spatial information business
Use spatial web applications for mapping
Undertake spatial remote sensing

BSB07 Business Services

Franchising
Governance induction
Key management
Key recording keeping
Legal transcription
Medical Transcription
Small business contracting
Small business financial management
Small business home-based business
Small business indigenous corporate governance
Small business marketing

Small business operations preparatory
Small business preparatory
Small business intellectual property
Intellectual Property Strategic Management
Copyright
Trade mark
Patent
Design protection
Basic contact centre operations
Design Fundamentals

ICT02 Telecommunications

Broadband
Telecommunications networks
Access network
Digital technician
Cabler registration

ICT10 Integrated telecommunications

Digital reception technology
Wireless LAN & IP Network Installation
Domestic Digital TV Antenna Installation
Commercial Digital TV Antenna Installation
Satellite Digital TV Antenna Installation
Fibre to the Premises (FTTP) Installation (base level installers)
Fibre to the Premises (FTTP) test and commission Installation (advanced level installers)
Installing NBN wireless and Infrastructure
Basic telecommunication rigging installation
Advanced telecommunication rigging installation
IP Convergence installations for home and SME
Convergent technology for home and SME
Basic ICT sustainability
Advanced ICT sustainability
Access networks
Broadband cabler registration
ICT Planning and Designing
Technical help desk support

HLT07 Health

X-ray operation
Allied health assistance-physiotherapy
Allied health assistance-podiatry
Allied health assistance-occupational therapy
Allied health assistance-speech pathology
Allied health assistance-nutrition and dietetics
Aromatherapy
Reflexology
Audiometry
Client safety
Clinical coding
Dental radiology

FNS04 Financial services

Corporate superannuation fund trustee work
Self managed superannuation fund trustee work

FP105 Forest and Forest Products

Crawler/dozer operator
Skidder operator
Loader Operator
Forwarder Operator
Feller Buncher Operator
Boom Delimber Operator
Excavator Operator
Mechanical Processor Operator
Single Harvester Operator
Heavy Production Mobile Chipper Operator

CUE03 Entertainment

Photographic make up and styling

CUF07 Screen and Media

Community broadcasting administration
Community broadcasting committee management
Community broadcasting financial management
Community broadcasting management
Community broadcasting marketing
Community broadcasting program management
Community broadcasting coordination
Photographic make-up and styling

CUV03 Visual Arts, Craft and Design

Technical/scientific field-based photo imaging

CS09 Music

Music Tutor

AVI08 Aviation

Aviation operator
Aviation supervisory cabin crew
Night aided vision aviation operations
Helicopter wireman
Airborne rappelling
Airborne recovering
Aircraft underwater escape
Emergency breathing system
Simulator operator
Simulator trainer
Simulator operator/trainer
Airborne rappelling supervisor
Aerobatic pilot
Formation pilot
Night visual flight rules (NVFR) pilot
Marine transfer pilot
External load pilot

Rappelling and winching pilot
Flight instructor

MSA07 Manufacturing

Trade measurement verification (simple measure)
Trade measurement verification (simple measuring instrument)
Trade measurement verification (limited weighing instrument)
Trade measurement verification (liquid measuring instrument using volume measures)
Trade measurement verification (complex measuring instrument)

UEE07 Electro-technology

Designer of Grid Connected Photovoltaic Systems
Installer of Grid Connected Photovoltaic Systems
Designer/Installer of Grid Connected Photovoltaic Systems
Energy Efficiency Auditor
Energy Efficiency Systems Developer
Energy Efficiency Systems Designer
Identify Energy Efficiency Strategies
Energy Efficiency Systems Integration
Design Complex Carbon Dioxide Refrigeration Systems
Design Secondary Refrigeration Systems
Design Hydrocarbon Refrigeration Systems
Design Ammonia Refrigeration Systems
Service and Repair Hydrocarbon Refrigeration and Air Conditioning Systems
Service and Repair Carbon Dioxide Refrigeration and Heat Pump Systems
Install and Commission Hydrocarbon Refrigeration Systems, Major Components and Associated Equipment
Service and Repair Ammonia Refrigeration Systems
Install and Commission Ammonia Refrigeration Systems
Service and Repair Secondary Refrigeration Systems
Service and Repair Carbon Dioxide Refrigeration Systems
Install and Commission Carbon Dioxide Refrigeration Systems
Attend to Breakdowns in Hazardous Areas - Coal Mining
Install Explosion-Protected Equipment and Wiring Systems - Coal Mining
Maintain Equipment in Hazardous Areas - Coal Mining
Overhaul and Repair of Explosion-Protected Equipment - Coal Mining
Conduct a Conformity Assessment of Explosion-Protected Equipment - Coal Mining
Conduct Testing of Hazardous Areas Installations - Coal Mining
Conduct Detailed Inspection of Hazardous Areas Installations - Coal Mining
Develop and Manage Maintenance Programs for Hazardous Areas Electrical Equipment - Coal Mining
Carry Out Overhaul and Repair of Explosion-Protected Equipment - Coal Mining
Conduct Audit of Hazardous Areas Installations - Coal Mining
Plan Electrical Installations in Hazardous Areas - Coal Mining
Design Explosion-Protected Electrical Systems - Coal Mining
Restricted Telecommunications Cabling Registration – ACMA
ACMA Restricted Telecommunications Cabling Registration
ACMA 'Open' Cabling Provider
Install and Modify Performance Data Communication Structured Cabling
Install and Modify Performance Data Communication Optical Fibre Cabling
Install Aerial Communication Cables
Install Below Ground Communication Cables
Install and Set Up Interval Metering

UET09 ESI - Transmission Distribution and Rail Sector Training Package Version 2

Apply Access Procedures to Work On or Near Electrical Network Infrastructure
Apply ESI Safety Rules, Codes of Practice and Procedures for Work On or Near Electrical Apparatus
Perform Pole Top Rescue
Perform Tower Rescue
Perform Rescue from Switchyard Structures at Heights
Perform EWP Controlled Descent Escape
Provide First Aid in an ESI Environment
Perform CPR
Perform Pole Top Rescue and CPR
Perform EWP Rescue and CPR
Perform Tower Rescue and Provide First Aid
Perform Switchyard Rescue at Heights and Provide First Aid
Perform Rescue from a Live LV Panel and CPR
Perform Cable Pit/Trench/Excavation Rescue and CPR
Perform Cable Pit/Trench/Excavation Rescue
Perform Rescue from a Live LV Panel
Perform EWP Rescue

SIT07 Hospitality Tourism and Events

Barista
Beverage Specialist
Essential Business Skills for a Restaurant Manager
Responsible Service of Alcohol
Sommelier

Appendix F:

Training packages and units of competencies in content analysis

Table F1 OHS units of competency examined in the content analysis by Training Package

Training Package	No. of competency units dealing with safety	Titles of units examined
Aviation (good)	14	Implementing regulations and policies during aircraft safety and service operations
		Monitor the transfer of hazardous materials
		Undertake aircraft underwater escape and survival
		Utilise emergency breathing system
		Implementing regulations and policies during check-in procedures
		Apply relevant laws and regulations to the management of an aerodrome
		Marshal aircraft
		Supervise the safety of aerodrome works and general access
		Maintain the safety of people and aircraft
		Respond to abnormal and emergency situations within the aircraft
		Manage human factors in aircraft flight
		Supervise cabin safety and security
		Provide SAR alerting and emergency advice
		Manage human performance and team resources during air traffic control
Automotive industry: Retail, service and repair	1	Apply safe working practices
Automotive manufacturing	1	Maintain a safe automotive manufacturing work environment
Agri-food	1	Demonstrate care and apply safe practices at work
Correctional services	3	Use safe work practices
		Supervise occupational health and safety practices
		Maintain occupational health and safety system
Construction, plumbing and services integrated framework		Apply OHS requirements, policies and procedures in the construction industry (good example)
Entertainment	1	Identify and manage safety and health requirements at an outdoor fireworks
Screen and media (good)	1	Manage safety aspects of screen productions
Music	1	Follow health, safety and security procedures in the music industry
Food processing	6	Follow work procedures to maintain food safety
		Monitor the implementation of occupational health and safety policies and procedures
		Implement occupational health and safety systems and procedures
		Follow work procedures to maintain health and safety
		Implement the food safety program and procedures
		Identify, evaluate and control food safety hazards

Training Package	No. of competency units dealing with safety	Titles of units examined
Financial services	1	Apply health and safety practices in the workplace
Forest and forest products	1	Follow OHS policies and procedures
Information and communications	1	Apply occupational health and safety procedures
Furnishing	3	Follow safe working policies and practices
		Establish and maintain a safe furniture making work environment
		Determine occupational health and safety implications of designs
Textiles, clothing and footwear	2	Follow defined OH&S policies and procedures
		Conduct safe handling laundry materials
Aeroskills	1	Apply occupational health and safety procedures at supervisor level in aviation maintenance
Manufacturing	4	Follow OHS Procedures
		Work safely
		Maintain the workplace OHS management system
		Establish workplace OHS management system
Manufactured mineral products	1	Follow OHS procedures
Printing and graphic arts	1	Implement and monitor OHS (supervisor)
Telecommunications	1	Follow occupational health and safety policy and procedures
Public safety	1	Work safely around aircraft
Hospitality tourism and events (3 examined)	5	Follow health, safety and security procedures
		Follow workplace hygiene procedures
		Identify hazards, and assess and control safety risks
Hairdressing	1	Follow personal health and safety routines at work
Resources and infrastructure industry – (2 examined)	13	Work safely and follow OHS policies and procedures
Retail services	2	Enter and work in confined spaces Apply safe work practices Provide a safe working environment
Chemical hydrocarbons and refining	1	Undertake helicopter safety and escape
Maritime	1	Follow OH&S and emergency procedures during shore-based mooring operations
Transport and logistics	1	Follow OH&S procedures
Transmission, distribution and rail sector (1 examined)	2	Implement and monitor the organisational OHS policies, procedures and programs
Electricity supply industry - generation sector	1	Comply with occupational health and safety policy and procedures
Sugar milling	2	Follow safe work practices
Training and assessment	1	Ensure a health and safe learning environment
Business services (2 examined)	34	Apply knowledge of OHS legislation in the workplace Participate in OHS processes

Appendix G: Description of personal protective equipment and hazards in the workplace

Table G1 Personal protective equipment and hazards by industry area

	Personal protective equipment described for industry sectors	Hazards identified for industry sectors
Manufacturing	Hard hats, goggles, glasses, face shields, hearing protection (ear muffs and plugs), dust mask, canister mask, SCBA long range breathing, gloves, gauntlets, safety boots, anti-static equipment, overalls, aprons and jackets/pants	Handling chemicals and hazardous materials, chemical spills, gases, liquids under pressure, moving machinery and equipment, hazardous materials, work at heights, in restricted or confined spaces, or environments subject to heat noise, dust, vapours, fire and explosion, bomb scares, incidents with a potential for serious injury
Forest and forest products	Overalls, steel capped boots, high visibility vests, jackets, gloves, safety glasses, safety visors, hard hats, caps, dust masks, respirators, ear muffs, ear plugs, cut resistant leg protection.	High temperatures, high fires, protrusions, sharp equipment, overhanging beams and traffic
Furnishing	Personal protective equipment	Material hazards (related to fabrics, finishes, wood, metal, plastic, paint foam, oils, animal skin, adhesives, nails, steps, physical properties, breakage, weight), production hazards (manual handling, finishing and production processes, use of tools and machinery, splintering, dust, power sources and leads, flying debris, fume inhalation, trips, falls, lack of control during pouring, machine safety, vibration (direct and indirect) toxicity, fumes, combustibility,) hazards for users (allergies to materials, injury from materials or components, injury due to design faults, lack of stability, breakage, and difficulties in handling and installing products).
Aviation	High visibility vests, overalls, earmuffs, eye goggles, protective overalls, protective overalls, protective boots, respiratory protection, signalling devices, head protection	Bomb scares, fires and explosions, fuel or chemical spills, violent incidents Gasses and liquid under pressure, moving machinery, working at heights and confined spaces, fuel, ammunition and sewerage.
Hospitality, tourism and events	Use of personal protective clothing and equipment	Bomb threats, irrational customers, accidents, robberies or hold-ups, fires, floods, earthquakes, power failure, contamination, body fluids, spitting, sneezing, coughing, blowing nose, smoking, eating over foods or food preparation surfaces, contaminated food, vermin, air-borne dust, linen, tea towels that may be contaminated with human waste such as blood and body secretions, dirty equipment and materials and utensils, contaminated garbage, colleagues without appropriate training or understanding of good hygiene practices, policies and procedures, equipment not working correctly such as fridge and temperature probes, working space, lighting, hot and cold environments, climate, weather or exposure such as insufficient shade and protection from rain, sun or wind, exposure to flood, fire and storm, prevailing noise levels, electrical items, flooring, equipment designed to assist or replace manual handling, pests, crowds, wild animals and local wildlife, customers' abilities to fully engage in all activities, hazards associated with activities to be undertaken, plant (machinery, tools, appliances, equipment) working practices (opening and closing procedures, security procedures), theft and robbery, bomb scares

	Personal protective equipment described for industry sectors	Hazards identified for industry sectors
Mining	Hard hats, hearing protection, eye protection, safety boots, respiratory masks, other prescribed clothing and equipment related to tasks, self rescuers which may include filet or self contained types, respiratory protection devices include air purifying respirators, self contained compressed air breathing apparatus, supplied airline breathing apparatus, escape breathing apparatus, atmospheric monitoring devices,	Fires, underground services, excavation, traffic, hazardous materials, contaminated atmosphere and toxic gases, smoking restrictions, alcohol impairment, improper use of drugs, fatigue, physiological, psychological stress, medication, illness, restricted means of entry and exit associated with confined spaces, unsafe oxygen levels or engulfment
Retail	Procedures for the use of personal protective clothing and equipment	Broken and faulty equipment, storage of dangerous goods and hazardous substances, fire electrical and chemical hazards, spills and leakage of materials, trips and faults,
Chemical , hydrocarbons, and refining	Covered footwear, long trousers, no loose items or hats	Jammed or damaged survival equipment, personal injury or injury to others, trapped personnel, loose or damaged equipment, adverse weather conditions
Maritime	Safety footwear, safety helmet, suitable gloves (optional) safety vest, reflective, braces, personal collar insert for flotation device	Being hit by a line thrown down from a vessel, stepping inside the bite of the line, being struck by a parting line, mixing wings and wire rope, falling off the edge of the wharf into the water, back-strain from carrying or heaving lines (including with one hand), 'snap back' in the event of a synthetic line breaking
Transport and logistics	Gloves, safety headwear and footwear, safety glasses, two-way radios, high visibility clothing	Fatigue, chemicals and other harmful obstacles, movement of equipment, goods and vehicles, toxic substances, damaged packing materials and containers, broken and damaged equipment, inflammable materials and fire hazards, lifting practices, waste management and disposal, extremes in weather conditions, lighting levels, floor surfaces, water hazards, traffic flows, vehicle and equipment operation, a range of storage areas
Sugar milling	Relevant personal protective clothing and equipment and hazard control equipment	Manual handling, handling of chemicals and dangerous goods, working at heights and on platforms, working in confined spaces, working moving equipment, working with 240V power supply, working in exposed conditions, working with combustible materials
Construction, plumbing services and integrated framework	Aprons, arm guards, caps, dust mask/respirators, ear muffs/plugs, hard hats, high visibility retro reflective vests, jackets, overalls, safety glasses/goggles, steel capped boots, UV protective clothing and sunscreen	Electrical spills, electrical safety work in confined spaces, excavations, including trenches, falling objects, fires, gases, hazardous materials (including asbestos containing materials, cleaning chemicals including those in pressurised containers, solvents, treated timber products), high or very low temperatures, HIV and other infectious diseases, liquids under pressure, manual handling, moving machinery and equipment, noise, dust and vapours, overhanging beams, protrusions, sharp equipment, traffic, ultra-violet (UV) radiation, unplanned collapse, working at heights