



Australian
Industry and
Skills Committee



UEE RAIL SIGNALLING

Case for Change

Name of allocated IRC(s): Electrotechnology
Name of the SSO: Australian Industry Standards

1. Administrative information

For a list of the products proposed to be reviewed as part of this project, please see **Attachment A**.

Name of IRC(s):	Electrotechnology
Name of SSO:	Australian Industry Standards

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

UEE Electrotechnology Training Package

2. The Case for Change

For information on the job roles to be supported through the proposed qualifications updates, enrolments data, completion rates, and the number of RTOs delivering these qualifications please see **Attachment B**.

2.1 Rationale for change

During transition of the UEE Training Package several issues were identified by stakeholders which fell outside of the scope of the transition project.

It was identified that UEE41220 Certificate IV in Electrical - Rail Signalling and associated Units of Competency were no longer fit for purpose because they do not reflect current industry technologies and work practices.

There is currently a mismatch between the qualification outcomes and the skill and knowledge needs of employers. This mismatch has implications for the productivity and safety of workers.

In addition, the entry requirement added to the qualification as part of removing nested content during the transition is causing a barrier for some employers who deliver the qualification concurrently with the Certificate III Electrician qualification.

The entry requirement needs to urgently be reviewed to enable industry's preferred method of delivery.

2.2 Evidence for change

Rail projects are among the Government's prioritised infrastructure projects which include a substantial amount of electrical related work. Rail projects require electricians who are skilled in rail signalling. There is a reported shortage of signalling technicians.

The growing demand for electricians in different industries, especially for rail infrastructure projects, requires the workforce to be upskilled in installing and maintaining new technologies related to electrical components of rail signalling.

The qualification and units of competency were last updated over 10 years ago. Rail signalling technology has evolved significantly since that update. Some current units of competency reflect technology being phased out by the industry, and the systems which are now used are not adequately covered.

2.3 Consideration of existing products

Existing units of competency will be reviewed to bring them in line with current industry practice.

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

The qualification and units proposed for review in this project cover specific technical skills and knowledge required by the rail signalling sector to work safely in compliance with industry requirements. Unfortunately streamlining or rationalisation of this content is not possible given the nature of the work functions covered.

The appropriateness of all prerequisites of units in the Case for Change will be reviewed.

Packaging rules of the qualification will be reviewed to ensure they provide flexibility and best reflect industry's needs and vocational pathways.

3. Stakeholder consultation

3.1 Stakeholder consultation undertaken in the development of Case for Change

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

The need for a review of this qualification was identified during the broad consultation conducted for Release 2.0 of the UEE Electrotechnology Training Package.

Development of the Case for Change involved consultation with stakeholders via the following communication mechanisms:

- Stakeholder webinars
- Face to Face meetings (Virtual)
- AIS Website
- Stakeholder networks
- Teleconferences
- Emails

The work was outlined during a webinar which included representatives from all States/Territories and regional areas of those jurisdictions. Feedback on the proposed work was invited during the webinar.

The work was posted in the Engagement Hub of the AIS website and feedback invited.

Notification of the opportunity to provide feedback through the Electrotechnology webinar, or in writing through the Engagement Hub, was provided to over 1,100 Electrotechnology sector stakeholder subscribers.

3.2 Evidence of Industry Support

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

No objections to the proposed review of the qualification were raised during the consultation process. There is strong support for the review because the current qualification is not fit for purpose and its content significantly out of date.

The work was outlined during a webinar conducted for the Electrotechnology industry on 26 March 2021 which had 80 participants. The proposed work was also detailed in the Engagement Hub of the AIS website for stakeholders to review and provide feedback, and no issues were raised in response.

3.3 Proposed stakeholder consultation strategy for project

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

Key Industry stakeholders will be identified in consultation with industry regulators, associations, and the Electrotechnology IRC.

A general invitation to participate on the project Technical Advisory Committee (TAC) will be sent to all Electrotechnology subscribers. Targeted invitations will also be sent to known technical experts.

AIS, on behalf of the Electrotechnology IRC, will promote the opportunity to contribute through stakeholder webinars, the AIS website, EDM's, AIS newsletter and public notifications. Stakeholders will also be notified of key milestones throughout the life of the project, including requests for feedback on draft materials.

Stakeholder engagement and consultation will occur over the life of the project via a combination of the following methods:

- Direct engagement: Face to face consultations, Site visits, Phone, emails, video/teleconferencing meetings
- Industry forums and conferences
- Webinars
- Online feedback mechanisms
- STA direct engagement

Given the size of Australia and all stakeholders are not centrally located in major cities, a range of consultation strategies will be used so stakeholders in rural, regional and remote areas, and in smaller jurisdictions have multiple avenues to provide feedback.

This includes but is not limited to, online/video consultation, email correspondence and promotional activity via targeted communications including social media. A recently developed Engagement hub on the AIS website provides a one stop portal for information about how all stakeholders can participate and inform Training Package development work.

4. Licencing or regulatory linkages

This qualification is intended for qualified Electricians and as such the licencing and regulation implications for Electricians apply.

5. Project implementation

5.1 Prioritisation category

It is proposed that this review be progressed as a Fast-track project and will be published together with several other projects which industry needs fast-tracked.

The need to update out of date units and address barriers caused by the entry requirement need to be addressed urgently.

Release 2.0 of the UEE Training Package was primarily a transition project and did not include the review of content in its scope. The need for this review was identified during the transition of UEE11 content which was identified as substantially out of date.

5.2 Project milestones

Key project milestones include:

- AISC project approval – August 2021
- Technical Advisory Committee (TAC) formed – September 2021
- Draft 1 consultation – November-December 2021

- Stakeholder validation – February 2022
- Quality Assurance – March-April 2022
- Final consultation with states and territories – April 2022
- CfE submitted for approval – May 2022


5.3 Delivery or implementation issues

An important part of this project is to remove an entry barrier to the qualification being implemented in the way some employers need. The IRC has been approached by V-line who run the Certificate IV qualification concurrently with the Certificate III Electrician qualification after the first year of the latter. The new entry requirement of the Certificate III will extend the duration of apprenticeships considerably which will impact retention of apprentices and the supply of qualified trades people. This will need to be resolved whilst still ensuring rigor in how the Certificate III Electrician qualification is delivered.

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

The project submission will support industry’s expectations for training delivery and provide a revised Companion Volume Implementation Guide (CVIG) to support delivery of the new products.

This Case for Change was agreed to by the Electrotechnology IRC

Name of Chair	Larry Moore
Signature of Chair	
Date	14 May 2021

Attachment A: Training Package components to change

Australian Industry Standards

Contact details: David Dixon, Chief Operating Officer

Date submitted: 14May 2021

Project number	Project Name	Qualification/ Unit / Skillset	Code	Title	Details of last review (endorsement date, nature of this update transition, review, establishment)	Change Required
3	Rail Signalling	Qualification	UEE41220	Certificate IV in Electrical – Rail Signalling	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0001	Assemble and wire internal electrical rail signalling equipment	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0002	Decommission electrical and electromechanical rail signalling from service	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0003	Develop rail signalling system maintenance programs	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0004	Find and repair rail signalling system faults	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0005	Install and maintain active level crossing equipment	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0006	Install and maintain computer-based interlocking rail systems	05/Oct/2020 - Transition	Update

Project number	Project Name	Qualification/ Unit / Skillset	Code	Title	Details of last review (endorsement date, nature of this update transition, review, establishment)	Change Required
3	Rail Signalling	Unit	UEERS0007	Install and maintain non-vital screen-based control systems	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0008	Install and maintain non-vital telemetry systems	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0009	Install and maintain power-operated point actuating devices	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0010	Install and maintain rail signalling power supplies	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0011	Install and maintain rail track circuit leads and bonds	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0012	Install and maintain trackside signal and train protection equipment	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0013	Install and maintain train detection equipment	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0014	Install and maintain vital relay interlocking systems	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0015	Maintain electronic and microprocessor-based remote control systems	05/Oct/2020 - Transition	Update

Project number	Project Name	Qualification/ Unit / Skillset	Code	Title	Details of last review (endorsement date, nature of this update transition, review, establishment)	Change Required
3	Rail Signalling	Unit	UEERS0016	Maintain mechanical rail signalling equipment and infrastructure	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0017	Repair rail signalling power and control cables	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0018	Test and commission rail power equipment	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEERS0019	Test copper rail signalling cables	05/Oct/2020 - Transition	Update
3	Rail Signalling	Unit	UEECD0058	Observe safety practices are followed in the vicinity of isolated electrical cables	05/Oct/2020 - Transition	Update

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

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

Job role	Qualification to be updated to support the job role	Enrolment data (for the past three years)	Completion rates (for the past three years)	Number of RTOs delivering (for the past three years)
342315 Electronic Instrument Trades Worker (Special Class)	UEE41220 Certificate IV in Electrical – Rail Signalling	542	159	7
	UEERS0017 Repair rail signalling power and control cables	316	184	14
	UEERS0011 Install and maintain rail track circuit leads and bonds	325	178	14
	UEERS0001 Assemble and wire internal electrical rail signalling equipment	321	182	14
	UEERS0019 Test copper rail signalling cables	317	173	14
	UEERS0010 Install and maintain rail signalling power supplies	264	147	3
	UEERS0007 Install and maintain non-vital screen-based control systems	6	1	3
	UEERS0005 Install and maintain active level crossing equipment	287	144	3
	UEERS0002 Decommission electrical and electromechanical rail signalling from service	1	5	3
	UEERS0006 Install and maintain computer-based interlocking rail systems	287	143	3

	UEERS0016 Maintain mechanical rail signalling equipment and infrastructure	24	6	3
	UEERS0018 Test and commission rail power equipment	6	1	3
	UEERS0009 Install and maintain power-operated point actuating devices	269	136	3
	UEERS0003 Develop rail signalling system maintenance programs	0	0	3
	UEERS0015 Maintain electronic and microprocessor-based remote control systems	16	0	3
	UEERS0004 Find and repair rail signalling system faults	279	139	3
	UEERS0014 Install and maintain vital relay interlocking systems	274	133	3
	UEERS0008 Install and maintain non-vital telemetry systems	440	147	3
	UEERS0013 Install and maintain train detection equipment	270	138	3
	UEERS0012 Install and maintain trackside signal and train protection equipment	287	144	3
	UEECD0058 Observe safety practices are followed in the vicinity of isolated electrical cables	0	0	3

Attachment C: List of stakeholders that actively participated in the consultation process of the Case for Change

Name of Stakeholder	Title	Organisation	Organisation type (e.g. Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g. NSW/Sydney)
State Training Authorities		State Training Authorities	State Training Authorities	All States and Territories
Frances Parnell	Manager	Department of Training and Workforce Development	Other	WA / Perth
Neda Aleksic	Industry Engagement - VET product development	ISACNT	Other	NT / Darwin Nt
Elizabeth Joannou	Training Programmes Manager	Global Sustainable Energy Solutions	RTO	NSW / Sydney
Jakes Jacobs	Industry Workforce Planner	Energy Skills Queensland	Other	QLD / Brisbane
Veronica Mauri	Training and Safety Consultant	V Mauri Training & Safety Consulting	Other	QLD / Hollywell
Paul Govett	Competency Specialist - S&C	V/Line Corporation	Employer	VIC / Bendigo
Greer Novak	Principal Advisor	Electrical Safety Office	Regulator	QLD / Bowen Hills
Kevin O'Shea	President	RACCA	Peak body	NSW / Sydney
Jamie Hall	Technical Support Training Officer	Mitsubishi Electric Australia	Employer	NSW / Rydalmere

Brett Willowwhite	Team Leader Electrotechnology & Plumbing	Charles Darwin University	RTO	NT / Darwin
Nate James	RTO Compliance Officer	V/Line Corporation	Employer RTO	VIC / Melbourne
Geoff Corkery	Training Specialist	Powerlink	Employer	QLD / Brisbane
Joshua Macphail	ElectroTechnology Teacher	TAFE Queensland SkillsTech	RTO	QLD / Bracken Ridge
Cindy Maret	Education, Advisor and Assessor	Energy Safe Victoria	Regulator	VIC / Tarneit
Jesse Collins	Compliance Officer	Energy Safe Victoria	Regulator	VIC / Glen Waverley
Karen Ruppert	RTO Manager	Catholic Education Archdiocese Canberra Goulburn	RTO	ACT NSW / Manuka
Steve Gale	Teacher ICT	The Gordon TAFE	RTO	VIC / Geelong
Claire Bennett	Manager - Learning and Development	A.G.Coombs	Employer	VIC / Moorabbin
Benjamin Hawkins	Policy Manager	AMCA	Peak body	VIC / Burwood
Katie Tunnah	Apprenticeship Program Coordinator	APA Group	Employer	NSW NT QLD SA VIC WA / Southbank
Sue Sheppard	General Manager RTO	Electro Group Training QLD	Employer RTO	QLD / Rocklea

Ryan Flack	Project Engineer/RTO Trainer	Global Sustainable Energy Solutions	RTO	NSW / Sydney
Peter B	Assessor	Vetassess	RTO	VIC / Melbourne
Norma Angeloni Tomaras	Product Manager Electrotechnology	TAFE NSW	RTO	NSW / Mount Druitt
Mark Burgess	National Apprenticeship Officer	ETU	Union	VIC / Gherang
Peter Collins	Program Leader - Electrical	Melbourne Polytechnic	RTO	VIC / Heidelberg
Travis Hayes	Education Manager	Chisholm Institute	RTO	VIC / Melbourne
Pravneel Singh	Technical Manager	Daikin Australia	Employer	NSW / Sydney
Gregory Kempton	Trainer	CIT	RTO	ACT / Canberra
Maria Zarkovic	RTO Manager	V?line Corporation	RTO	VIC / Melbourne
Sue Sizer	Senior Compliance Officer, Education and Assessmen	Energy Safe Victoria	Regulator	VIC / Melbourne
Alexander Newman	CEO	Centre for U	RTO	VIC / Melbourne
Angelo Scanu	Manager	Victoria University	RTO	VIC / Melbourne, Victoria
Jason Aquilina	Electro Teacher	Sunshine College - Harvester Campus	RTO	VIC / North Sunshine

Marie Previte	Skills and Training	Edmund Rice Education Australia - Office	RTO	QLD / Brisbane
Matt Houston	Manager - Field Operations	AG Coombs Servicing	Employer	VIC / Port Melbourne
Harry Melzer	Teacher	Harvester Technical College	RTO	VIC / Melbourne
Darron Febey	Teacher	Tastafe	RTO	TAS / Devonport
John Ingram	Teacher	Melb. Polytechnic	RTO	VIC / Melbourne
Supritha S	Skills Outlook Officer	TAFE NSW	RTO	NSW / Sydney
Neil Roberts	State Inspector - Engineering	Safework NSW	Regulator	NSW / Parramatta
Steve Bryant	Project Specialist	Box Hill Institute	RTO	VIC / Tarneit
Robert Tischler	Electrical Teacher	Boxhill Institute	Employer	VIC / Melbourne
Lachlan Searle	Teacher	Federation TAFE	RTO	VIC / Ballarat
Gayathri Dhanashekar	Education Manager	Chisholm Institute	RTO	VIC / Dandenong, Victoria
Tim Sealey	Assistant Director Analytics and Policy	ACT Govt	Other	ACT / Canberra
Darren Ballard	Electrotechnology Teacher	Federation Tafe	RTO	VIC / Ballarat

Chris Stark	Product Innovation Lead	NECA Education & Careers	RTO	VIC / Carlton
Ian Harrison	Resource developer/teacher	NECA Education & Careers	RTO	VIC / Carlton
Wayne Jones	Technical Training Manager	Melbourne Water	Employer	VIC / Melbourne
Tony Palladino	Executive Officer	NSW U&E ITAB	Other	NSW / Beakfast Point
Luke O'Sullivan	Director	Livewire Training and Consultancy	RTO	NSW / Rozelle
James Charlton	Electrical Teacher	Chisholm Tafe	RTO	VIC / Frankston
Mick Cullen	EO	Future Energy Skills	Peak body	VIC / Clayton, Melbourne
Craig Turner	Teacher	TAFENSW	RTO	NSW / Glendale
Tobias Keating	Developer	NECA Training	Employer RTO Other	ACT NSW QLD / Chullora
Patrick Scharf	Head of Electrotechnology Faculty	Australian Trade Training College	RTO	ACT NSW NT QLD SA VIC / Banyo
Jared Barclay	Electrical training and assessment	NECA	Peak body	NSW / Sydney
David Muller	Head Teacher	TAFE NSW	RTO	NSW / Granville
Jenny James	Teacher	Swinburne Tafe	RTO	VIC / Wantirna
Kyle Mounser	Head Teacher, Electrotechnology	TAFE NSW	RTO	NSW / Newcastle

Gary Ainsworth	Head Teacher Electrotechnology	TAFE NSW	RTO	NSW / Miller
Neil Waixel	teacher	swinburne	RTO	VIC / Wantirna, Melbourne
Adam Riley	Teacher	TAFE	RTO	NSW / Tamworth
Greg Keep	Compliance Specialist	Energy Queensland	Employer RTO	QLD / Brisbane
Tim Bolam	Electrical Reliability Leader	Tomago Aluminium Co. Pty Ltd	Employer	NSW / Newcastle
Blake Mortimer	Engineering support manager	Daikin	Employer	NSW / Chipping Norton
Ian Eggleton	TEACHER	TAFE	Employer	NSW / Newcastle
Nathanael Out	Teacher	Swinburne University	RTO	VIC / Wantirna
Ted Jenkinson	Electrical Teacher	Swinburne	RTO	VIC / Melbourne
Jo O'Mahony	Trainer and Assessor	GOTAFE	RTO	VIC / Shepparton
Dorothy Bakens	Education Consultant	McGraw Hill Australia Pty Ltd	Other	VIC / Richmond
Ian Maguire	Educator	Swinburne0	RTO	VIC / Melbourne
Nick Achelles	Education Consultant	McGraw Hill Education	Other	NSW / Sydney
Russell Feldtmann	Trainer and Assessor	Goulburn Ovens Institute of Tafe (GOTAFE)	RTO	VIC / Shepparton

Steve Hall	General Manager	ECAWA College of Electrical Training	RTO	WA / Perth
Troy Bond	Industry Consultant	UEEA Training Council	Other	WA / Perth
Manuel Barragan	Manager, Strategy and Policy	Artibus Innovation	Other	TAS / Sandy Bay
Electrotechnology IRC	Various	Various	Employers, Associations, Unions, Regulators	National

The Case for Change development also involved contacting stakeholders from the following organisational types across all states and territories within Australia as required:

- Industry Reference Committee (IRC) Representatives
- Employers (Non-IRC)
- Peak Industry Bodies
- Unions
- Regulators
- RTOs
- Other/Consultants

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

Stakeholder Type	Issues Raised	IRC's Response to Issues Raised
<p>Training Boards/Other</p>	<p>From WA UEEA. Western Australian stakeholders agree with the proposed Cases for Change for the UE Training Packages. No stakeholders have reported issues with the proposals.</p> <p>It is good to see that the industry has accepted that the current Cert IV is not hitting the mark. This statement was followed by technical information to inform the review.</p>	<p>Technical advice submitted will be provided to the Technical Advisory Committee guiding the project.</p>
<p>State and Territory Training Authorities (STAs)</p>	<p>WA STA: we note that Regulators will be engaged in the process therefore we support the Case for Change</p> <p>This qualification is intended for qualified Electricians and as such the licencing and regulation implications for Electricians apply – therefore the person undertaking the units must have their electrical license?</p> <p>The Victorian STA supports the CfC proceeding to the AISC conditional on the removal of the weighting points. As with other areas of the UEE, the weighting points add unnecessary complexity or errors into the training package.</p>	<p>No units that relate to achieving an electrician's licence are included in this review. Only the specific Rail Signalling units are being reviewed.</p> <p>Regulators will be engaged throughout the project to ensure any amendments and development work comply with their requirements.</p> <p>The project will include a review of packaging rules of the qualification. Options for how packaging rules can be improved to better meet the needs of industry (including removal of weighting points) will be provided to the Technical Advisory Committee and the IRC for their consideration. The IRC will direct how the packaging rules are formed in the final qualification submitted for endorsement.</p>

	<p>In regard to UEE41220 weighting points for some units exceed the maximum allowed for the qualification (examples provided).</p> <p>It is pleasing to note the review will address the use of prerequisites creating a barrier to course entry (examples provided).</p>	The project will include review of prerequisites of all units of competency in the Case for Change.
Industry Reference Committee (IRC) Representatives	NIL	NA
Peak Industry Bodies	NIL	NA
Employers (Non-IRC)	NIL	NA
Regulators	NIL	NA
Registered Training Organisations (RTOs)	NIL	NA
Unions	NIL	NA
Please add other categories as appropriate	NIL	NA

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

Relevant Stakeholders identified in attachment C and the following:

Name of Stakeholder	Title	Organisation	Organisation type (e.g. Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g. NSW/Sydney)
State Training Authorities		State Training Authorities	State Training Authorities	All States and Territories
State Electrical Regulators	Various	Various	Regulator	All States and Territories
RTOs with scope to deliver current qualifications	Various	Various	RTO	All States and Territories
Private and publicly owned rail operators	Various	Various	Employers	All States and Territories
State Industry Training Bodies/Boards/Councils	Various	Various	Other	All States and Territories
Employers (small/medium/large)	Various	Various	Employers	All States and Territories
Peak Industry Bodies	Various	Various	Associations	National and State bodies
Australian Defence force	Various	Australian Defence Force	Employer	National
Electrotechnology IRC	Various	Various	Employers, Associations, Unions, Regulators	National