PROXIMITY

Foreign AME Recognition Framework

Final Report

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Contents

Executive Summary

Proximity has been engaged by CASA to address the shortage of Aircraft Maintenance Engineers (AMEs) in Australia by designing a foreign recognition framework that will licence foreign AMEs to perform aircraft maintenance in Australia, while ensuring Australia's high standard of aviation safety.

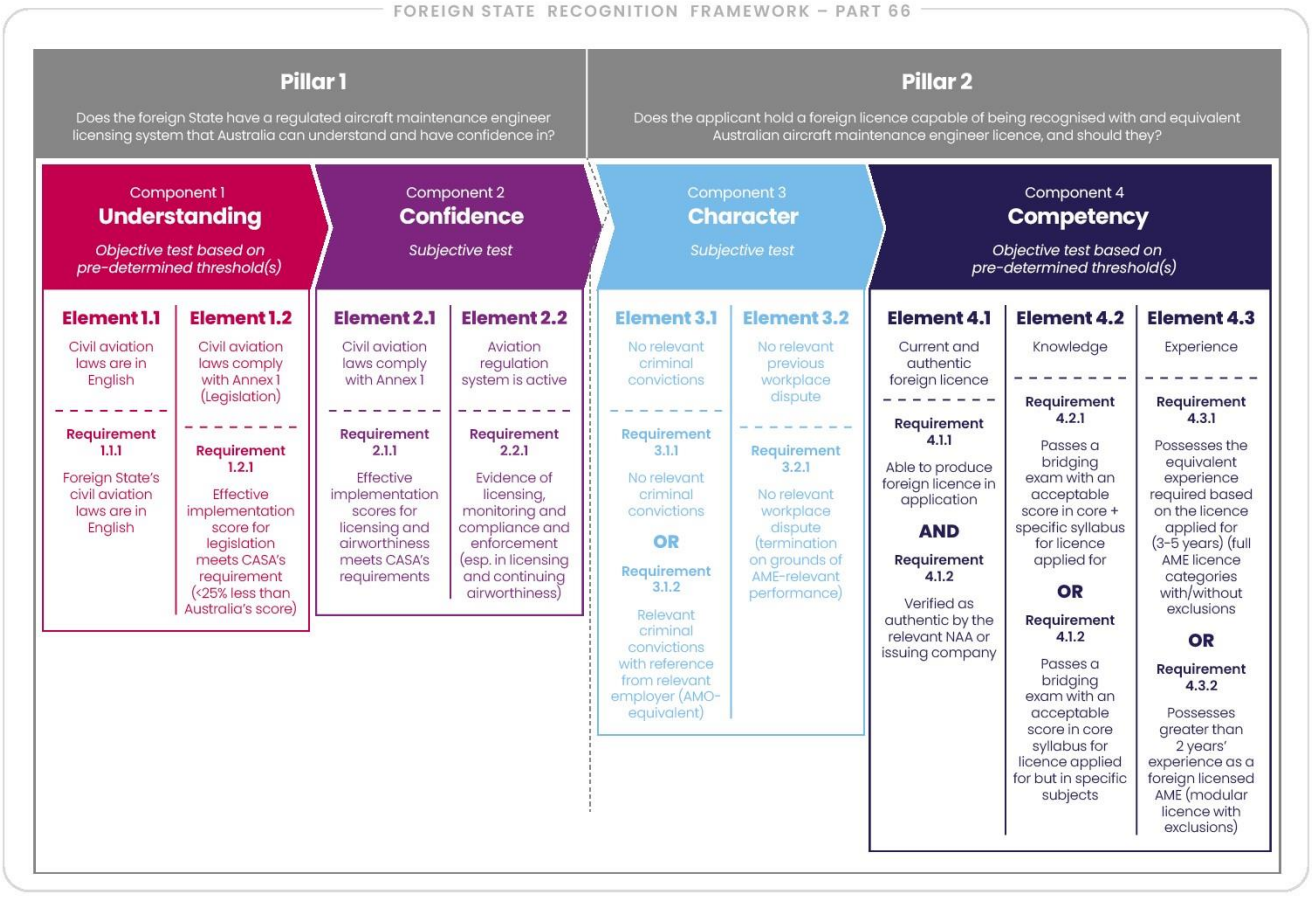
The high-level aim of the project was to provide a framework to operationalise regulation 66.030 which provides a mechanism for CASA to recognise the competency of a foreign AME licence holder and grant an Australian licence based on certain requirements. This requires two key elements:

- **Foreign State Recognition Framework:** A framework for recognising a foreign state as a "recognised foreign state"; and
- **Foreign Applicant Competency Assessment Framework:** A framework for assessing a foreign state licence holder's competency against Australian AME experience and knowledge requirements.

The intended outcome of the project is to bestow, at a high level, confidence in foreign states' AME licensing systems, thus allowing engineers from those nations to gain Australian licences without having to complete standard training modules and examinations required under Part 66.

To inform the design of the foreign state recognition framework, a series of different countries' airworthiness regulations were analysed and judged against Australia's Civil Aviation Safety Regulations (CASR). The conclusion drawn is that countries using the skeleton of the European Union Aviation Safey Authority's (EASA) legislation align well with Australia and can be generally trusted to have rigorous AME licensing.

To concretely recognise foreign states and applicant foreign AMEs, the following framework was developed.



Comprehension

In the comprehension step, the foreign state is judged objectively as to whether its laws and regulations align with global aviation standards. For Australia to consider recognising a foreign state, it must have its aviation safety laws publicly available in English, and these laws must be compliant with the ICAO Annex 1, demonstrated by the foreign state's ICAO Universal Safety Oversight Audit Programme (USOAP) Effective Implementation (EI) score for legislation.

If these requirements are met, CASA can consider the state on a deeper and more discretionary level.

Confidence

Once CASA confirms the comprehension of the foreign state's regulations, a closer investigation of publicly available regulatory practices is undertaken. Guided by the USOAP Effective Implementation (EI) scores for licensing and airworthiness, CASA can set a suitable threshold for foreign states to attain. A recommended benchmark would be to score above the global average (78%), or 25% below Australia's legislation EI score (75%).

CASA's final requirement to recognise a foreign state is evidence of proper regulatory practice. In particular, whether there is evidence of satisfactory licensing, ongoing compliance and monitoring, and enforcement processes by the state. A CASA foreign state recognition assessor will review the National Aviation Authority's (NAA) publicly disclosed regulatory practice information, including in annuals reports, published compliance and enforcement actions against regulated entities, recently updated licensing guidelines, etc. to determine a foreign state's regulatory practices and whether they meet Australia's standards.

Following the comprehension and confidence assessments, we recommend CASA publish an annual (or otherwise periodically reviewed) legislative instruments under Part 11 for the purposes of defining "recognised foreign State" for the purposes of Part 66, with all foreign States that have been assessed by CASA in the previous year to meet Australia's standards under this framework.

Character

Once CASA can be confident that the foreign state's licensing system is robust, the individual applicant must prove suitability for an Australian AME licence. For a foreign licence to be recognised, the applicant must be from a recognised foreign state approved by CASA using the 'Comprehension and Confidence' tests above.

Then, the applicant is subject to a fit-and-proper persons test, ensuring the applicant has no relevant criminal convictions or history of relevant workplace disputes. Relevant criminal convictions include fraud and other deception-related crime and convictions for substance possession or abuse. Relevant workplace disputes include performance-related complaints and compliance conflicts.

Beyond that, the applicant must also be medically fit and have acceptable English fluency to be eligible for recognition of a foreign licence.

Competency

Should the applicant be deemed fit-and-proper, CASA must then verify the applicant's foreign licence.

The applicant must also provide evidence of necessary maintenance experience and sit a bridging exam run by an MTO or CASA. Should the applicant pass all aspects of the bridging exam, an Australian licence will be granted.

If the applicant fails to demonstrate the required knowledge in some parts of the syllabus, the applicant may be granted a modular or partial licence, with the authority to perform specific tasks. The expectation is that partial licence holders will work to attain a full licence while performing their role as an AME.

Proximity has developed a "cheat sheet" to help operationalise the foreign state assessment and applicant competency assessments. We have also undertaken an example assessment of 10 foreign states to guide implementation.

Implementation

Proximity expects the recommended framework to be sufficiently thorough and ready for implementation in November-December 2024. We have provided suggested focus areas for CASA to consider in implementing the framework, including roles and responsibilities of CASA, maintenance training organisations (MTOs) and possible assessment subcontractor(s), strategic communications, and required regulatory change over the medium term (when Mart 66 is next amended).

Introduction

Background

Australia is regarded as an international leader in civil aviation standards, with excellent quality assurance systems and regulatory frameworks translating to commercial success and operational efficiency and exceptional aviation safety outcomes. However, this reputation is at risk due to a pressing shortage of Australian licensed AMEs (LAMEs). This shortage was identified as early as 2019 by the Aerospace Industry Reference Committee[1] who referenced a 38% fill rate for vacancies across the aviation industry in 2017. Since then, the shortage has been well-documented, with reports by the ABC and the Australian Aviation Quarterly discussing the situation.

Seek.com.au anticipates a 16.7% growth in the aircraft maintenance engineer job market over the next five years in Australia, with 217 job openings currently available on their platform. In contrast, the number of new LAMEs granted by CASA annually was 128. In FY23 and 292 in FY24. Additionally, approximately 50 foreign-licensed AMEs applied for an Australian licence through either Part 66 or the *Trans-Tasman Mutual Recognition Act 1997* (TTMRA) in FY23, with 158 applications in FY24, reflecting a 300% growth. This indicates a significant increase in demand for LAMEs in Australia. The current and anticipated supply will not meet the current and expected demand for LAMEs in Australia over the coming 2-5 years without innovation.

With a limited domestic pipeline, CASA has looked internationally to bolster the workforce of LAMEs in Australia. Currently, however, the pathway for foreign licensed AMEs to work in Australia is not optimised. There are currently two clear pathways for foreign licensed AMEs:

- **Recognition of Prior Learning (RPL):** An MTO conducts a RPL assessment from the foreign licence, which indicates the theory and practical training requirements that a foreign licence holder must undertake to obtain an Australian licence. This process treats foreign-obtained theory and practice as equating to "credits" but does not allow for automatic recognition and grant of an Australian licence. It is a technical assessment process, regardless of previous qualifications and work experience.[2]
- **Grant through the TTMRA:** The TTMRA provides mutual recognition between Australia and New Zealand of equivalent occupations, including licences and authorisation to perform equivalent professional roles. Many foreign AME licence holders from all over the world that seek to work in Australia also apply to New Zealand for recognition of a foreign AME licence, then use their newly granted New Zealand AME licence to be recognised under the TTMRA and therefore able to obtain an Australian AME licence. This approach limits a foreign applicant's type ratings based on aircraft available in New Zealand and reduces the number of aircraft that a licence holder can work on when they arrive in Australia.

While these two pathways exist, they are significantly limited with respect to recognising foreign AME licence holders as qualified professionals in Australia. This framework intends to provide a more direct and simple method for the recognition of foreign states under Part 66 to enable certain foreign AME licence holders to obtain and maintain an Australian AME licence based on their foreign licence without the need for prolonged training or experience pre-requisites, or through the TTMRA process.

The framework needed to strike the right balance, offering prompt recognition of licensed AMEs without compromising Australian aviation safety standards.

CASR provides examples of recognised foreign States in regulation 21.010B, where it defines a 'recognised country' for the purpose of Part 21 to mean Canada, France, Germany, the Netherlands, New Zealand, United Kingdom, United States of America, and for Subpart 21.B, 21.E and 21.M, particular Contracting States with Australia. The context of Part 21 is the certification and airworthiness requirements for aircraft and parts, rather than the certification of maintenance activities undertaken in continuing airworthiness. While the context is different, it demonstrates precedent in CASR that our aviation safety regulatory system can recognise the safety standards of foreign states to enable an international aviation system in Australia.

Foreign recognition is not a new concept in CASA's context and this framework aims to provide a simple but effective approach to alleviating Australia's AME demand issues which ensures aviation safety outcomes are not compromised.

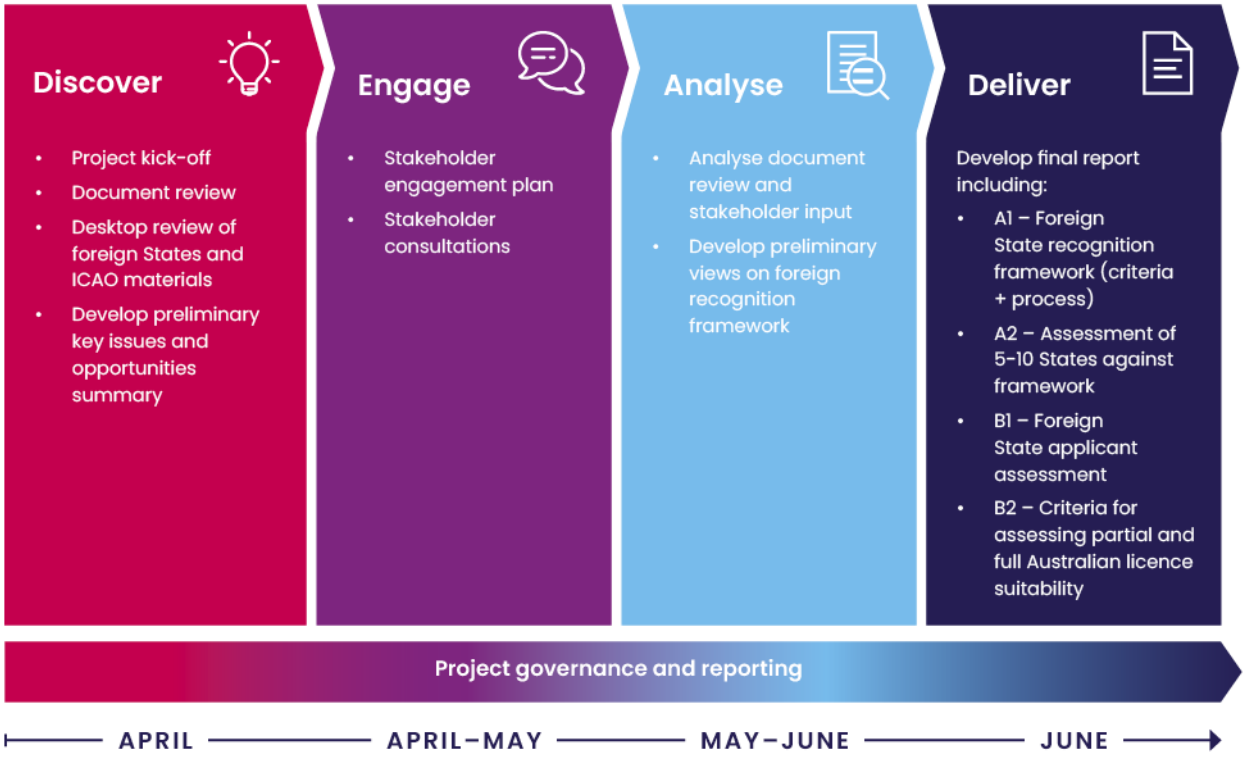
'The aircraft maintenance skilled labour shortage is at crisis point, both LAMEs and AMEs across all trades. To overcome this all levels of government and industry need to work together to implement a safe, commonsense approach prioritizing easy-to-implement policies to reduce the current barriers within the industry.'
– Matthew Wheatley, Sigma Aerospace Tamworth.[3]

[1] MEA-Skills-Forecast-2019.pdf (ibsa.org.au)
[2] Foreign-Licence-Conversion-Info-Sheet.pdf (aviationaustralia.aero)
[3] The shortage of aircraft engineers (raaa.com.au)

Project methodology

CASA engaged Proximity Advisory Services to undertake a project to develop this framework. Proximity has worked extensively with CASA in its flight operations and continuing airworthiness regulation reform program since 2018. Proximity is also well regarded across government with respect to regulatory design and implementation support, including the use of international comparative analysis to develop innovative approaches suitable to Australia's various regulatory contexts.

Proximity undertook this project using a four-stage approach:



Each phase and its activities are expanded below:

- In the **Discover Phase**, Proximity met with the project sponsor for a discussion outlining the practical and contextual nature of the AME shortage and the regulatory limitations currently in place. With project parameters set in these initial conversations, document review was undertaken to understand the global context of AMEs. In particular, primary and subordinate civil aviation legislation[4] across aircraft maintenance engineer licensing, continuing airworthiness, maintenance organisations, and maintenance training organisations was reviewed in detail. Internationally, AME licensing legislation and associated guidance from the United Kingdom, United States of America, Canada, New Zealand, Fiji, South Africa, Malaysia, Singapore and several others were reviewed, as well as frameworks from ICAO and EASA, with similarities and differences observed to understand the variation in civil aviation legislation internationally.
- In the **Engage Phase**, Proximity sought an understanding of how the AME shortage affects different stakeholders, and the current strategies to overcome this. Perspectives were gathered from subject matter experts throughout the aviation industry, including from key CASA personnel, the New Zealand Civil Aviation Authority's manager responsible for AME licensing and leaders of approved maintenance organisations. Concerns and opportunities expressed in these consultations were noted.
- In the **Analyse Phase**, Proximity brought together all the research that had been compiled. Information was judged critically as to its importance and adaptability to an Australian context as preliminary views on a recognition framework were formulated. CASA licensing and training experts reviewed the initial findings to ensure fit-for-purpose recommendations. These recommendations have been designed to align with current licensing and training requirements under CASR requirements providing system-level guidance, avoiding the technical intricacies of requisite AME knowledge.
- The **Deliver Phase** involved the collation of findings into this draft report. Detailed within are the necessary factors to ensure CASA has a robust and efficient framework to maintain aviation safety and address the AME shortages across Australia. The framework will outline criteria for assessing recognised states, and a demonstration of this criteria against 5-10 states. A further framework for assessing applicants from outside recognised states and subsequent criteria is also presented.

[4] *Civil Aviation Act 1988*, *Civil Aviation Regulations 1988*, *Civil Aviation Safety Regulations 1998*, Manuals of Standards, Advisory Circulars, and other legislative instruments.

Observations

Throughout stakeholder consultation and the desktop review, key components and elements of each component became evidence that are relevant for the framework to take into account. These components and elements form the basis for the framework, and the options analysed under each element in this observations section provides insight into the key design features of the proposed framework in the next section.

Figure 1 provides a summary of the high-level components and elements that structure this section of the report.

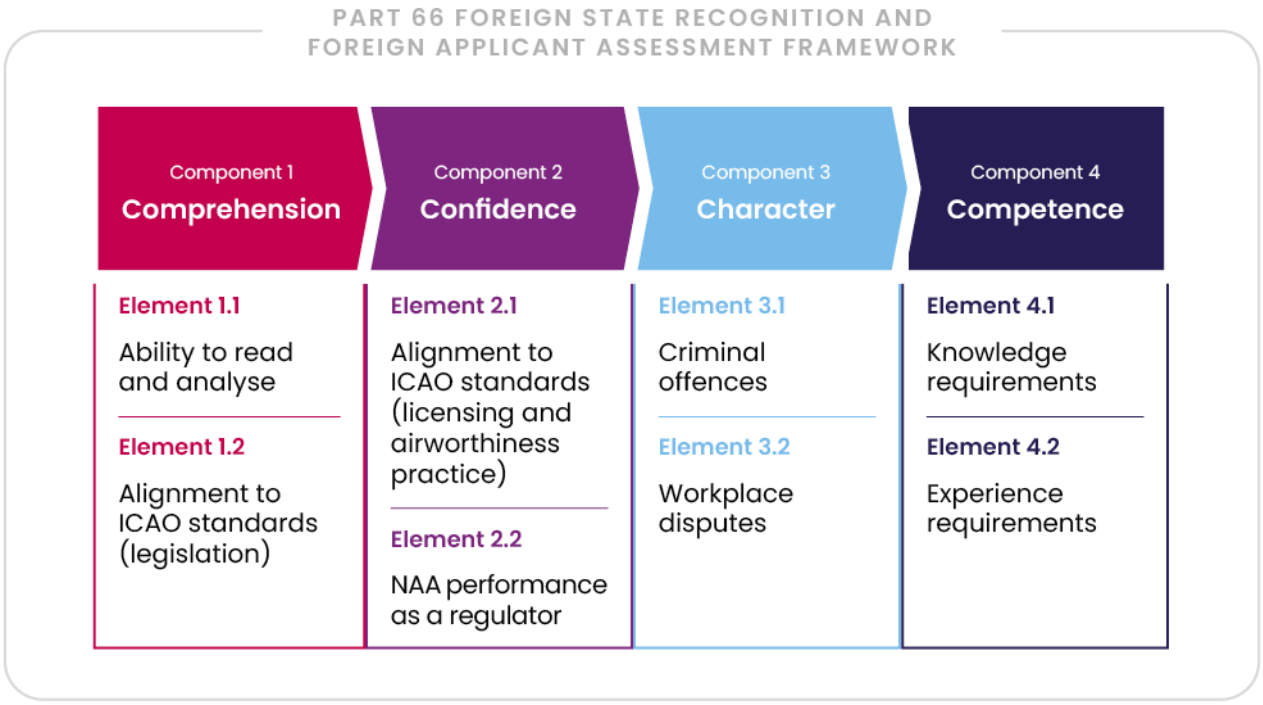


Figure 1: Part 66 Foreign State Recognition and Foreign Applicant Assessment Framework (Proximity created)

CASA may only grant an aircraft engineer licence if CASA is satisfied that the applicant meets the requirements mentioned in regulation 66.025(3), being:

- The applicant is at least 18 at the time of making the applicant
- The applicant can read, write and converse in English to a level that is sufficient
- The applicant understands the applicant's role, as a licenced aircraft maintenance engineer in airworthiness management
- The applicant either does not have a medically significant condition or, if they do, CASA determines the applicant can safely exercise 1 of the privileges mentioned in the Part 66 Manual of Standards for the licence applied for
- The applicant meets the requirements of sections 66.A.25 and 66.A.30 of the Part 66 Manual of Standards for the licence applied for (or is taken under another regulation to meet those requirements, such as regulation 66.030).

The foreign recognition framework is intended to assist the operation of regulation 66.030 in particular, and this section is intended to be read with the requirements of 66.030 in mind.

Component 1: Comprehension

Element 1.1: How can the framework ensure CASA can analyse/read a foreign state's civil aviation safety framework?

Throughout the desktop review and stakeholder consultations, it became evident that the stability of the global aviation system provides a high level of assurance upon which the Part 66 foreign recognition framework could leverage. In our review of countries that have a foreign recognition framework, the key "barrier" to understanding whether a foreign applicant should be granted a domestic AME licence was whether the granting NAA could read and interpret the foreign state's laws.

In our consultation with the CAANZ we learned that the key factor that guides the regulator's assessment of a foreign state is whether the foreign state's laws are available in English. The CAANZ leaves this open to either:

- **English-speaking:** Countries with their aviation safety laws available in English; or
- **Translated:** An applicant providing a professionally translated version of their aviation safety laws under which their AME licence was granted.

Given the prohibitive cost of having technical aviation safety laws translated accurately into English, an applicant relying on the latter option usually takes an alternative route to becoming licensed in New Zealand, such as applying for a foreign-recognised AME in a third country that is English-speaking that can then be recognised by New Zealand. For example, African nations having their licence recognised by South Africa, then their South African licence recognised by New Zealand and a New Zealand licence issued on that basis.

As the latter is capable of being navigated, it doesn't seem like a necessary element of the Part 66 Foreign Recognition Framework.

In summary, the framework should have an element that requires the foreign state's laws to be available in English.

Element 1.2: How can the framework ensure that CASA does not need to analyse every provision of a foreign state's civil aviation safety framework to determine its comprehension?

The ICAO Universal Safety Oversight Audit Programme (USOAP) monitors the compliance of member states and provides Effective Implementation (EI) scores that reflect their adherence to international standards. USOAP assesses Effective Implementation across legislation, organisation, licensing, operations, airworthiness, accident investigation, air navigation services, and aerodromes. As of 1 January 2024, ICAO has conducted USOAP activities in 187 of the 193 Member States, representing 97% of all Member States that bear safety oversight responsibility for 99% of international air traffic.[5]

While Effective Implementation does not equate to aviation safety outcomes, it is a worthwhile indicator of a foreign state's compliance with Annex 1. When compared to the global average, Australia demonstrates a significantly higher Effective Implementation Score across all categories, however New Zealand outscores Australia in licensing and is evenly matched in airworthiness (**Figure 2**).

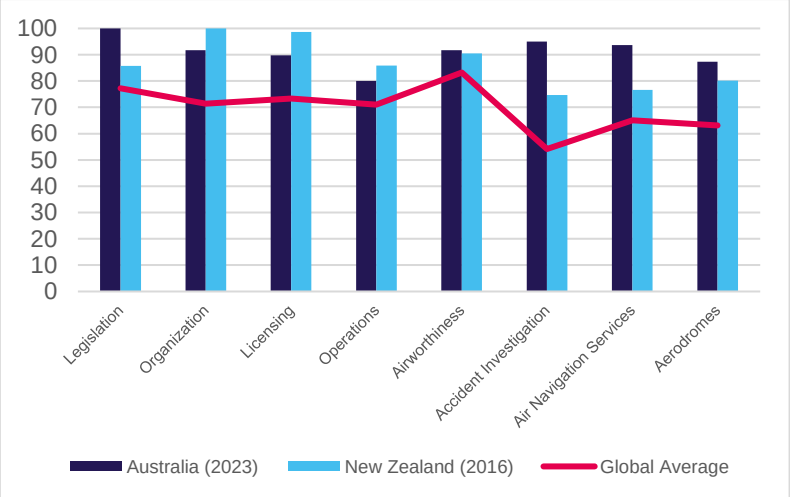


Figure 2: ICAO USOAP Effective Implementation scores for Australia and New Zealand compared to the global average. Source: Safety Audit Results: USOAP interactive viewer (icao.int).

As the alternative pathway into Australia for foreign licensed AMEs is through New Zealand and the TTMRA, it is important that the framework balances rigour with practicality so as not to frustrate accessibility. If New Zealand is willing to recognise a broader range of foreign States under their framework, and ICAO USOAP assesses New Zealand's licensing standards and practices as exceeding Australia's, our framework should not be overly prescriptive as to what is/isn't an appropriate EI score to justify foreign recognition.

Another limitation of the EI score is that it is heavily dependent on the last USOAP activity in a State. For example, Papua New Guinea's Civil Aviation Act 2000 and subordinate legislation implemented by the Civil Aviation Safety Authority of Papua New Guinea (CASA PNG) are modelled after New Zealand's civil aviation framework. While Papua New Guinea demonstrates 95.24% EI for legislation, New Zealand demonstrates 85.71% EI. These scores ignore implementation of legislation across different audit areas, which is a more accurate indicator of aviation safety. The difference would also be in part due to deviation that New Zealand

[5] Frequently Asked Questions about USOAP (icao.int).

has made while maintaining the same aviation safety outcomes in its laws, but also is likely attributable to New Zealand's last ICAO USOAP activity being conducted eight years ago, compared to Papua New Guinea's being completed last year. Similarly, the United Kingdom's 2009 ICAO USOAP activity demonstrated low alignment on licensing and airworthiness, and only moderate alignment for legislation.

While personnel licensing is only a component of the laws of a foreign state, through our analysis we found that a foreign state that demonstrated high EI Legislation scores had legislation that broadly aligned with Australia's EASA-approach to Part 66. **Figure 3** demonstrates a broad-brush assessment of the degree to which EI Legislation alignment gives us insight into whether a foreign state should be recognised:

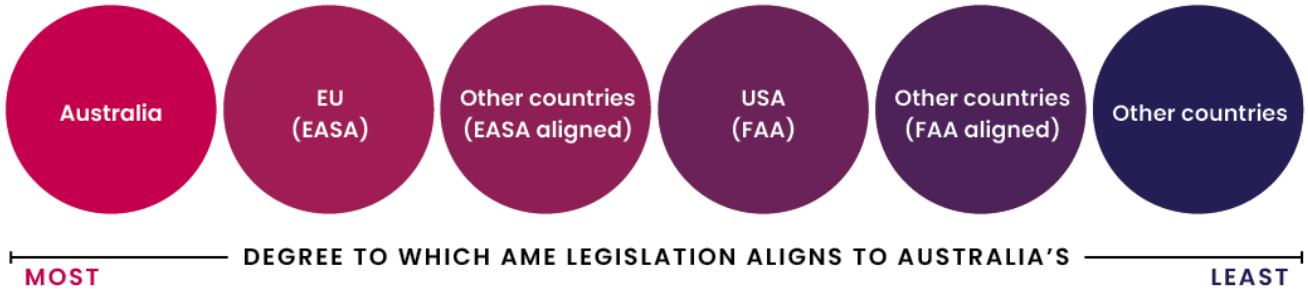


Figure 3: Indicative assessment of approaches to laws regarding aircraft maintenance engineer licensing (Proximity created)

We did not find a non-English speaking country that did not meet the EI Legislation element when we stress-tested this observation, however that is based on current EI Legislation scores, and this may change as the currency of laws is tested by technological development and each country's approach to responsive regulation.

In summary, the framework should have an element that requires the foreign state's laws to comply with ICAO Annex I, which can be assessed by CASA using indicia such as ICAO USOAP's EI Legislation score.

Component 2: Confidence

Element 2.1: How can the framework ensure CASA has confidence that a foreign state's civil aviation framework delivers equal or better aviation safety outcomes generally and with respect to aircraft maintenance engineer licensing and activities?

A foreign state's static laws do not give complete assurance that civil aviation outcomes are being achieved. CASA should be assured that a foreign state's NAA operates similarly to CASA with respect to performing regulatory functions in the regulatory system. In essence this is a "health check" of a foreign State's regulatory system with the goal of CASA being assured that the foreign State achieves equal aviation safety outcomes based on evidenced regulatory practices.

There are many ways CASA could achieve this assurance, however the simplest is to assess the following three key elements of any civil aviation regulatory framework:

- **Evidence of licensing:** Evidence of clear prohibition of unauthorised AME activities, accompanied by a prescriptive authorisation by the NAA to a person/regulated entity to enable them to engage in AME activities, as well as evidence of ongoing updates and responsive regulation (e.g. updates to licensing guidance, publishing licensing-related data, similarity of approach and language used in civil aviation regulation)
- **Evidence of ongoing monitoring and compliance:** Evidence of an NAA monitoring regulated entities to determine conformity or adherence with regulatory requirements to determine the entity's compliance status (e.g. consultation on proposed changes to compliance-related regulations/guidance/requirements incl. documents required to demonstrate compliance).[6] Evidence of actions taken by the NAA to work with or manage an entity's return to compliance (i.e. monitoring and compliance-dedicated staffing and articles on actions taken to return an entity to compliance).
- **Evidence of enforcement action:** Evidence of an NAA undertaking a regulatory activity taking action against a regulated entity who is in breach of regulatory requirements, including in an escalated and proportionate way (e.g. publishing enforcement actions including notices issued to entities, prosecution, etc.).[7]

[6] Grant Pink (2021) *Navigating Regulatory Language An A to Z Guide*, p. 157.
[7] Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending Deregulation Debate* (Oxford Socio-Legal Studies) (1992), p. 35 Figure 2.1 Enforcement Pyramid

Ideally AME licensing, compliance and enforcement examples are available, but CASA can still make a determination about its confidence in a foreign NAA's regulatory system by looking at adjacent elements such as continuing airworthiness more generally such as AMO-equivalents, MTO-equivalents, etc. It is important not to look too narrowly at AME licensing, compliance and enforcement, but to look at the licensing system, compliance framework and enforcement actions within the licensing and continuing airworthiness sector more generally.

Table 1 below demonstrates information that CASA may use in determining the "activeness" of a foreign State's civil aviation regulatory framework.

Table 1: Draft assessment framework for high-level assurance of a foreign state's regulatory system

Foreign State	Evidence of licensing (i.e. public register, recent publications, etc.)	Evidence of ongoing monitoring and compliance	Evidence of enforcement action (incl. prosecution)
A			
B			
C			

Component 3: Character

Element 3.1: How can the framework ensure that an applicant is an appropriate person to hold an Australian aircraft maintenance engineer licence?

Criminal convictions

CASA does not currently require an applicant for an AME licence to provide details about previous criminal convictions.

The CAANZ has a fit and proper person test which includes consideration of criminal convictions, however in practice the regulator takes a discretionary and case-by-case approach to assessing suitability for an AME licence based on previous criminal convictions. A balanced and more objective approach could be for CASA to require an applicant with a relevant criminal conviction to provide a letter of reference from a foreign State AMO-equivalent to attest to their character.

It is important to balance the need for this information to be taken into consideration in granting an aircraft engineer licence with assessing an applicant's suitability prospectively and not arbitrarily limiting an individual's ability to maintain relevant authorisations to work in their profession (i.e. spent convictions or convictions in the distant past).

Examples of relevant criminal convictions are:

- Substance possession and/or use
- Fraud and deception-related crimes

Examples of criminal convictions that may not be relevant are:

- Assault and other physical crimes

Workplace disputes

When recognising a foreign state-granted AME licence, it is also important for CASA to understand how the licence was used and the quality of work undertaken by the licensee. To assess whether the applicant is suitable to hold an Australian licence, CASA should consider requiring a foreign applicant to obtain a reference from their previous employer confirming they have not been involved in a relevant workplace dispute.

Examples of relevant workplace disputes are:

- Performance-related issues
- Conflict with AME/AMO regulatory compliance (but not notified to NAA, i.e. caught by safety and quality system of employer)
- Insubordination (e.g. failure to follow lawful instructions from supervisors)

Examples of workplace disputes that are not relevant to the grant of a licence, and should be left to a prospective employer to assess are:

- Misconduct and ethical violations (e.g. harassment, bullying or other forms of inappropriate behaviour)

Component 4: Competency

Element 4.1: How can the framework ensure that an applicant possesses the appropriate knowledge and experience requirements to be granted an Australian aircraft maintenance engineer licence?

Broadly speaking, there are two approaches to assessing an applicant's competency and its equivalence to Australia's Part 66 requirements:

- **Technical:** Assessment of each syllabus and component of syllabus studied overseas and the equivalent syllabus and course in Australia (currently the approach to RPL and MTO assessment of credit eligibility).
- **Purposive:** Recognition that an applicant is already a licensed AME performing the roles and responsibilities of that authorised individual overseas, having passed a foreign state's knowledge requirements to do so, allowing Australia to "lower the bar" for demonstrating every requirement under Part 66 Manual of Standards 66.A.25 and 66.A.30.

CASA has a large degree of flexibility in assessing (or directing an authorised entity to assess) competency to hold either a category AME licence or a modular licence, with a multitude of exclusions also available to CASA to ensure competency demonstrated matches the licence granted.

Exclusions and partial licences appear to be a promising method of maximising the AME workforce in Australia. By allowing more AMEs to obtain licences, even with certain exclusions, AMOs can increase their workforce and therefore their operational capacity. Partial licences also help organisations mitigate competency risk by ensuring individuals are only certified for tasks they are fully qualified and capable of performing. For AMEs, partial licences offer easier entrance into the Australian workforce. Such licences could be time-limited to encourage completion of qualification, while being simultaneously unrestrictive in recognised areas of expertise. This would also provide a structured pathway for full licensure. The overall attraction of a partial licence is that a licence based on specific competencies, with exclusions is more beneficial than an all-or-nothing approach.

Partial licences aren't perfect, with over-exclusion posing several risks. This system could inadvertently lead to quasi-specialisation, whereby AMEs are only certified for highly specific tasks, or even excluded altogether, holding redundant privileges. There are also recruitment issues where employers may unfairly overlook candidates based on their exclusions.

A bridging exam is an effective method of knowledge testing that could be used to assess a foreign applicant's knowledge against specific knowledge requirements required to hold an Australian AME licence. The bridging exam could be used similarly to current assessments undertaken by Aspeq and MTOs, but rather than a need for a "gap exam" for all syllabus elements that an applicant does not demonstrate competency in, CASA to distinguish between syllabus subjects that absolutely must be passed, and others that don't.

Aspeq conducts all of CASA's basic knowledge module examples on its behalf for candidates using the self-study training pathway. Aspeq also conducts the New Zealand Civil Aviation Authority's foreign licence applicant testing for New Zealand aircraft maintenance engineer licensing. Through our consultations we learned that Aspeq have detailed comparative tables showing syllabus conversions between foreign states that CASA could use to determine alignment and gaps between a foreign State and Australia's knowledge requirements, with a short (i.e. 100 questions based on licence category applied for) bridging exam where syllabi aligned, and the use of exclusions and/or a modular licence where the syllabus does not align.

The bridging exam could cover all 17 modules required to demonstrate the requisite knowledge to hold an AME licence, with the exam provider (whether CASA, Aspeq, or an MTO) submitting a simple recommendation to CASA regarding knowledge competency and key gaps, which CASA would then assess to determine whether the applicant's knowledge means:

- a full category licence can be issued without exclusion(s)
- a full category licence can be issued with exclusion(s)
- a modular (partial) licence can be issued without exclusion(s)
- a modular (partial) licence can be issued with exclusion(s)

International comparative analysis

Licensing framework

Australia

Australia's licensing framework is detailed in CASR and informed by the recommendations in ICAO's Annex 1 to the Convention on International Civil Aviation. Australia's regulation also aligns with the EASA Part 66 system.

Specifically, the knowledge and experience requirements for AMEs are common to other EASA-aligned countries, with similar examination modules and syllabus, and up to 5 years of practical experience in aircraft maintenance.

The presence of approved Maintenance Training Organisations (MTOs) falls under Part 147 of the Australian Manual of Standards and EASA-aligned equivalents. Experience requirements can be reduced to one year with the completion of an approved MTO training course, while MTOs are responsible for running the examinations mentioned above.

Another important consideration is Australia's Defence Aviation Safety Regulations (DASR), administered by the Defence Aviation Safety Authority. DASR Part 66 also aligns with the EASA Part 66 system, and there is a high level of alignment with CASR legislative requirements. The project did not investigate the practices of DASA and the administration of DASR Part 66 and as such it does not compare the DASR system to other countries in the proposed framework. However, on face value it appears to be an opportunity for DASR-licensed AMEs to transition to the civilian framework successfully. This was validated through stakeholder consultation where participants noted the DASR-licensed AMEs and their relatively seamless transition to the civilian system in practice.

New Zealand

New Zealand, like Australia, are an Annex 1 state with alignment to EASA.

The New Zealand knowledge requirements follow a similar structure to Australia, with modules in aeronautical science, engineering knowledge and avionics recognised across all Annex 1 countries. Like Australia, New Zealand also have modules in human factors and aviation legislation, although these are retested for foreign AMEs.

New Zealand's experience requirements are contingent on any accredited training courses. With no completion in courses offered by Part 147 organisations, a New Zealand AME must have up to 5 years of experience (depending on licence class). This can be discounted to three years with participation in accredited training.

EASA-aligned countries

The EASA system covers 31 member states from Liechtenstein (population 38,0000) to Germany (population 83 million). All EASA-licenced AMEs can perform maintenance and certification in any member state provided the engineer "is able to read, write and communicate in the language(s) in which the technical documentation is written."

EASA does not recognise foreign AMEs, even where the foreign syllabus has been based off EASA regulation. This is likely due to the existing pool member states have to draw on with no need for foreign AMEs.

Many states, as noted above, base their regulation and Part 66 syllabus off EASA's standards, with the core knowledge requirements containing base modules on Maths, Physics, Electrics, Materials, Maintenance, Aerodynamics, Human Factors and Air Law, and further subject-specific exams to gain particular licence classes.

Experience requirements are, at their most general, one year with MTO-run training courses, up to five years practical experience required.

FAA-aligned countries

The Federal Aviation Administration in the USA does not align with Annex 1, but still informs several aviation authorities worldwide. Beyond the different in terminology (AMEs are "mechanics" in the FAA), the knowledge and experience requirements are distinct from those of EASA-aligned nations.

There are three classes of mechanic licence, an airframe licence, a powerplant licence, or an A&P licence, which combines both. To become licenced, there is a general knowledge exam and an airframe exam or powerplant exam. There is no explicit testing of air law or human factors, with these components built into the general knowledge exam.

The FAA also have looser experience requirements than EASA-aligned states, with 18 months experience required for a single mechanics licence, or 30 months experience for an A&P licence. As such, many Annex 1 states, such as New Zealand and Malaysia, do not recognised FAA licences when accepting foreign AMEs.

Other

Beyond the FAA and EASA systems, aviation regulations become difficult to equate to other nations, with unique requirements and responsibilities for maintenance engineers. These differences are further obfuscated by possible translation error for countries with non-English legislation. Given CASA's priority of safety in civil aviation, engineers from these states are unlikely to have many components of their AME licence recognised.

Foreign recognition framework

Aviation authorities worldwide have seen the necessity in foreign recognition of AMEs, with existing frameworks available for review and adaptation to Australian circumstances. Globally, acceptance for foreign AMEs varies greatly, with CASA seeking to leverage smooth international processes and overcome existing limitations in these systems.

A close study of existing frameworks has been conducted for four countries: New Zealand, Malaysia, Ireland and the United Kingdom. Summary inspection has also been completed for Canada, Kiribati and the United States of America.

This analysis serves to inform CASA's options in foreign recognition framework, observing the successes and drawbacks of international systems. With CASA sitting on the ICAO governing council as 'a state of chief importance in air transport' it is important to understand the benchmark to be a leader in foreign AME recognition.

New Zealand

In New Zealand, a licensed engineer from an ICAO Annex 1 country must pass a written exam in Human Factors, alongside written and oral exams in Air Law. Experience requirements ask that the AME has undertaken 'recurrent training provided by a competent authority of an acceptable foreign state.' CAANZ also require a fit-and-proper persons test, satisfactory medical fitness and English proficiency determined through the exams. AMEs not from ICAO Annex 1 countries are required to complete extra examinations and must gain further experience in New Zealand before being granted a New Zealand AME licence.

Malaysia

Malaysia has a similar system to New Zealand, recognising ICAO Annex 1 countries and requiring a pass in the Aviation Legislation module, as certified by a practical assessor. Malaysia also requires foreign AMEs to have at least three years of experience as a licenced maintenance engineer, exercising the privileges warranted in that role. English competency can be evidenced by an SPM (Malaysian secondary school certificate) with English language credits or an equivalent English certification. In Malaysia, the AME application must be submitted by an approved maintenance organisation, or individual contractor responsible for aircraft maintenance.

Ireland

The IAA in Ireland may validate any current licence with limitations and conditions on a case-by-case basis. However, this only grants a national licence for maintenance on aircraft not subject to EASA 2018/1139, and the provision for converting a national licence to an EASA Part-66 licence has long expired. In practice, the IAA probably don't grant national licences to foreign AMEs and require full training and assessment in line with EASA, but it is worthwhile reviewing such policies, nonetheless.

EASA states that 'Part-66 licences issued by countries other than EASA Member States are not mutually recognised in the European system' and 'an Aircraft Maintenance Licence (AML) issued by a country other than EASA Member States cannot be rendered valid as EASA Part-66 AML.'

United Kingdom

The United Kingdom has no apparent foreign recognition framework. No mention of any provisions is made in the UK's Continuing Airworthiness Regulations, which are heavily based on the EASA system, as the UK was an EASA member until 2020. Should the UK need to begin accepting foreign AME's, Part 66 states that 'Knowledge gained and examinations passed during previous experiences will be credited where the CAA is satisfied that such knowledge and examinations are equivalent to that required,'

which in practice is applied for engineers with defence experience or tertiary qualifications. In future, there is the scope to amend this clause to extend to foreign accreditation.

Comparison summary

Although the relevant states above have broadly similar domestic regulations, there are some key differences in foreign recognition processes. The UK and Ireland, which are both heavily aligned with EASA, show different attitudes in their frameworks prior to EASA requirements, but are both blanketed by EASA's non-recognition policy. This suggests that there is no shortage of AMEs in the UK or Ireland, likely buffeted by the pool of European AMEs with EASA licences that can transfer between member states. There is little suggestion here for an Australian framework, with the structural characteristics of New Zealand and Malaysia necessitating a more similar framework.

New Zealand and Malaysia offer similar recognition systems, identifying the ICAO Annex 1 states as highly qualified, with the minimum additional retesting requirements. The suggestion here is that the Annex 1 states are an appropriate first tranche of countries to accept AMEs from, with similar testing requirements in Aviation Legislation and Human Factors.

While there can be no guarantee of AME supply from these states, aviation safety is paramount and further recognition of other AMEs will need to be more rigorous. For example, an American airframe AME may have just two years of experience with no formal testing in Human Factors or Air Law. This engineer would require more robust assessment before being granted an Australian licence. As such, the framework below proposes a bridging exam to demonstrate the required knowledge to become a LAME in Australia.

Proposed framework

Overview

Figure 4 indicates the recommended Foreign State Recognition Framework, including relevant pillars, components, elements and requirements.

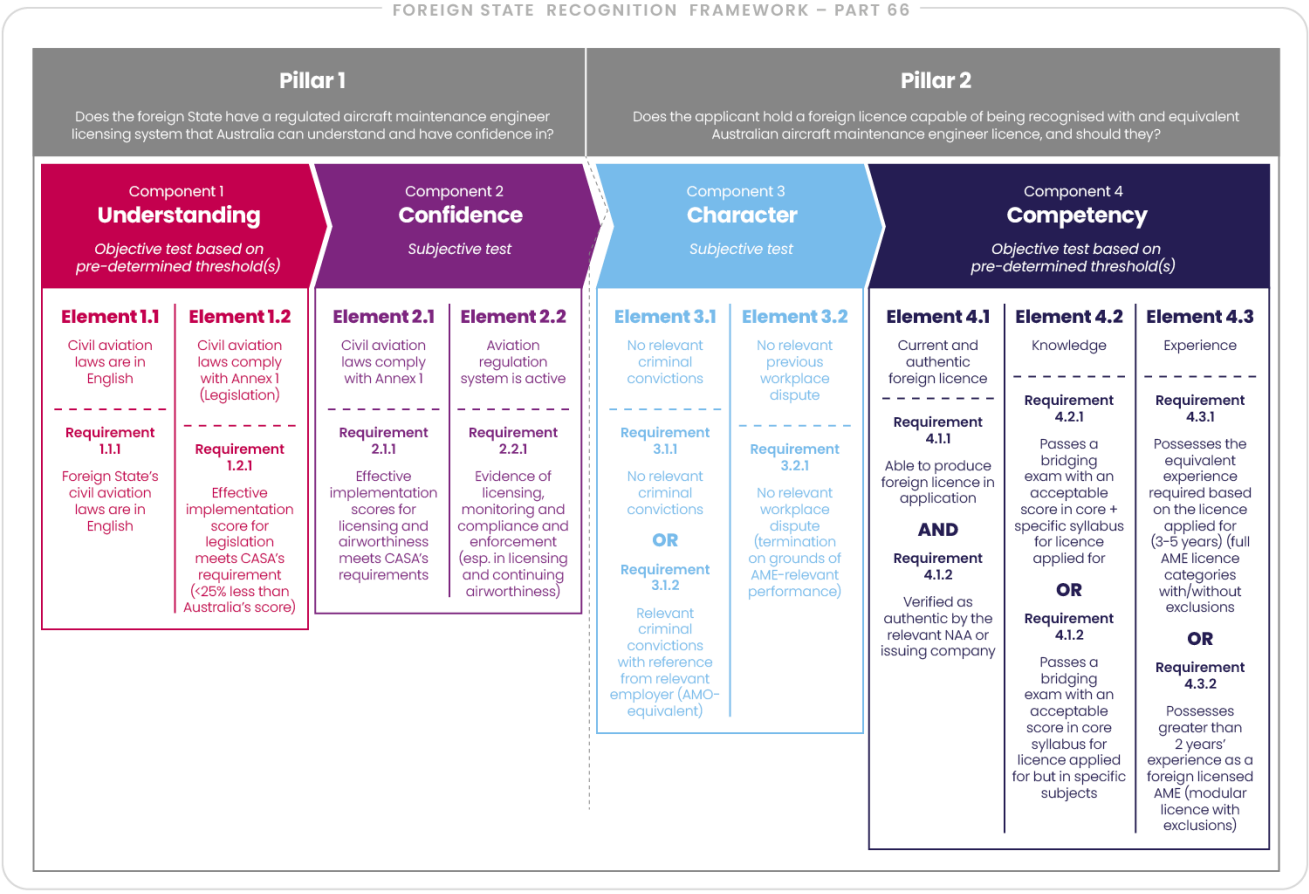


Figure 4: Draft Foreign State Recognition Framework (Proximity created)

Pillar 1: Foreign State Recognition

Component 1: Understanding

Requirement 1.1.1: Foreign State's civil aviation laws available in English.

The purpose of this framework is to create a simple but effective approach to the recognition of foreign States and assess applicant suitability to hold an Australian licence based on the scope of their foreign licence.

A key element of CASA being able to recognise a foreign State is the ability to assess their laws. To do so, it is necessary to impose a requirement that the foreign State's laws are enacted in English or are publicly available in English. This requirement enables CASA to:

- **Ensure comprehension and consistency:** Access to civil aviation laws in English allows CASA to accurately interpret and assess the foreign States' standards against Australian requirements. This ensures that the regulatory frameworks are consistent and meet the safety and competency standards of Australia.

- **Streamline the evaluation process:** CASA is more readily able to review foreign State information available in English without the added complexities and potential inaccuracies involved in translation.
- **Minimise misinterpretation and error:** Regulatory documents are necessarily technical and specific – both in legal drafting and in aviation technical terminology – which means that, if mistranslated, could lead to misinterpretation and errors. Ensuring the material reviewed is in English mitigates these risks and ensures clear understanding.
- **Facilitate ongoing compliance monitoring:** Having laws in English not only aids in the initial recognition process but also facilitates ongoing monitoring of a foreign States status as recognised into the future. This ensures that any updates or changes in the foreign States regulations can be promptly understood and integrated into CASA's oversight mechanisms for Part 66.

Requirement 1.2.1: Foreign state's civil aviation laws comply with Annex 1.

In order to compare a foreign state-licensed AME's suitability to hold an equivalent Australian licence, it is important to be assured that the foreign State's regulatory framework is aligned with Australia's with respect to civil aviation safety standards. ICAO has worked hard to create a global baseline for standards in the Chicago Convention and its Annexes. As Australia demonstrates strong alignment with the standards relevant to aircraft maintenance engineer licensing and activities contained in Annex 1 (Licensing) and Annex 6 (Operations of Aircraft), it serves us well as a reference point for a foreign States alignment to Australia's guiding principle of aviation safety.

This requirement enables CASA to:

- **Verify a foreign State's licensing system's competency to international standards:** Ensure that the foreign State's licensing processes meet global safety standards, giving assurance that licensed individuals are licensed in a legal framework of solid standing.
- **Verify a foreign State's aircraft operations regulatory system's competency to international standards:** Ensure that the foreign State's aircraft operations and maintenance standards are aligned with international safety practices, promoting operational safety and reliability of foreign licensed individuals and their actual activities (not just the licence itself).
- **Determine consistency and reliability:** Aligning with both Annex 1 and Annex 6 ensures consistency in safety and operational standards across different jurisdictions, and by having two key datapoints in this assurance it reduces the risk of discrepancies that could affect aviation safety and operational integrity (i.e. where a foreign State might have a detailed aircraft maintenance engineer licensing framework, but particular important certificates can be prepared for aircraft maintenance approval by lesser/other licensed individuals).

Eleven countries' EI scores have been compared to Australia's below for the purpose of testing the EI approach to this framework element across legislation, licensing and airworthiness.

Table 2: Comparison of different foreign states legislation USOAP EI scores

Category	Global Average	Australia (2023)	New Zealand (2016)	United Kingdom (2009)[8]	France (2020)	Germany (2021)	Ireland (2016)	Switzerland (2021)	Singapore (2022)	South Africa (2023)	USA (2007)	Canada (2023)	Fiji (2019)	Papua New Guinea (2023)
Legislation	77.27	100	85.71	78.26	100	81.81	91.30	91.30	100	100	81.82	76.49	61.90	95.24

We suggest CASA consider a USOAP legislation EI score either equal or greater than the global average, or no less than 25% of the Australian legislation EI score (to be reviewed periodically).

We have assumed that DASA and CASA would similarly administer their respective frameworks, however this should be tested before the assumption is adopted to ensure defensibility of this approach with respect to Pillar 1 and intern

[8] Note: last Effective Implementation score based of former EASA/EU framework. Unlikely to have varied significantly.

Component 2: Confidence

Requirement 2.1.1: Foreign State's civil aviation practices in licensing and airworthiness are equal to or greater than the global ICAO USOAP Effective Implementation score.

This requirement is intended to provide a more tailored assessment of a foreign State's regulatory framework to indicia that are more relevant to airworthiness-related licensing and practices. While Requirement 1.2.1 is concerned with USOAP EI scores for Legislation, Requirement 2.1.1 is concerned with how the foreign State's EI scores for Licensing and Airworthiness compare to the global average EI score and Australia's EI score.

Table 3: Comparison of a sample of foreign states USOAP Effective Implementation scores for licensing and airworthiness

Category	Global Average	Australia (2023)	New Zealand (2016)	United Kingdom (2009)[9]	France (2020)	Germany (2021)	Ireland (2016)	Switzerland (2021)	Singapore (2022)	South Africa (2023)	USA (2007)	Canada (2023)	Fiji (2019)	Papua New Guinea (2023)
Licensing	73.32	89.74	98.61	56.16	100	91.76	100	100	100	90.91	92.75	67.82	86.30	45.56
Airworthiness	83.24	91.72	90.48	65.36	100	91.13	99.12	94.59	100	92.41	96.41	81.33	87.78	61.32

Similarly to Requirement 1.1.1 with respect to DASR, we have assumed alignment between the military and civilian contexts. As such, "Australia" should be read to include DASA and CASA contexts. This assumption should be tested with DASA prior to implementing this approach.

Requirement 2.2.1: Evidence of active licensing, monitoring and compliance, as well as enforcement, especially in licensing and airworthiness.

Table 4 demonstrates information that CASA may use in determining the "activeness" of a foreign State's civil aviation regulatory framework.

Where a foreign State does not have sufficient publicly available regulatory information to support an assessment, CASA may wish to engage with the foreign State regulator to validate regulatory information for the purpose of a foreign State recognition assessment.

[9] Note: last Effective Implementation score based of former EASA/EU framework. Unlikely to have varied significantly.

Table 4: Assessment of example foreign State's across licensing, monitoring and compliance, and enforcement elements

Foreign State	Evidence of licensing (i.e. public register, recent publications, etc.)	Evidence of ongoing monitoring and compliance	Evidence of enforcement action (incl. prosecution)
United Kingdom (UK CAA)	Evidence of recent updates to aircraft maintenance engineer application documentation (3 June 2024) (SRG 1014 Issue 15)[10]	Evidence of recent updates to aircraft maintenance engineer key documentation web page revision (29 February 2024, but template used still from December 2008 (CAP 741: Aircraft Maintenance Engineers Log Book)[11]	Evidence of approved alternative dispute resolution for consumer disputes (updated 16 February 2018)[12] Evidence of civil enforcement action (most recent published action is 26 July 2023)[13]
France (France DACG) Germany (Luftahrt Bundesamt)	ED Decisions regarding Part 66 (i.e. ED Decision 2023/019/R on 2 November 2023), including amending regulations to include new training methods and teaching technologies and other improvements to Part 66 and Part 147, as well as Civil Aviation Orders[14]	Evidence of recent public consultation on proposed changes to various elements of monitoring and compliance framework regarding continuing airworthiness as recent as 21 June 2024.[15] Evidence of dedicated Engineering staffing to assist with monitoring and compliance activities.[16]	EASA Board of Appeal published decision last published on 7 September 2023.[17]
Switzerland (FACO)	Evidence of recently updated forms for AME licensing, including Basic Practical Logbook (1 Jan 2022), practical experience requirements for certain syllabus (1 April 2024).[18]	Publishing of annual aviation safety reports into safety incidents, including specifically to the maintenance of aircraft.[19]	Insufficient publicly available information to make an assessment.
Ireland (IAA)	Details about ongoing AME numbers in Ireland and AME licensing trends in Ireland over 2013-2023 (published 4 May 2024).[20]	Evidence of dedicated Engineering staffing to assist with monitoring and compliance activities.[21]	Evidence of a Licensing Decision Review body that deals with grant and ongoing compliance-related licensing decisions.[22]
Singapore (CAAS)	Evidence of recently updated Advisory Circulars relating to AME licensing (AC-66-13, AC 66-12(1)), evidence of foreign licence recognition specific Advisory Circular (AC 66-10).[23]	Insufficient publicly available information to make an assessment.	Insufficient publicly available information to make an assessment.

[10] SRG1014: Application for Initial/Amendment/Renewal of Part 66 Aircraft Maintenance Licence (AML) | Civil Aviation Authority (caa.co.uk)
[11] CAP 741: Aircraft Maintenance Engineers Log Book | Civil Aviation Authority (caa.co.uk)
[12] Schedule 4 List ADR entities 09 Sept 2017 (caa.co.uk)
[13] Table Of Undertakings | Civil Aviation Authority (caa.co.uk)
[14] ED Decision 2023/019/R - Review of Part-66 | New training methods and new teaching technologies | EASA (europa.eu)
[15] Example: Proposed Certification Memorandum ref. CM-ICA-002 Issue 01 on SORA OSO#03 'Medium robustness airworthiness requirements' | EASA (europa.eu)
[16] Jahresbericht 2020 - 2022 (lba.de). To note, publication is in German and a translator was used to make this assessment.
[17] EASA Board of Appeal | EASA (europa.eu)
[18] Aircraft maintenance personnel (admin.ch)
[19] Maintenance of aircraft (admin.ch)
[20] iaa-annual-report-2023.pdf
[21] iaa-annual-report-2023.pdf
[22] iaa-annual-report-2023.pdf
[23] Personnel Licensing & Training (caas.gov.sg)

Foreign State	Evidence of licensing (i.e. public register, recent publications, etc.)	Evidence of ongoing monitoring and compliance	Evidence of enforcement action (incl. prosecution)
	Data included in 2022-23 Annual Report about maintenance organisations, maintenance training organisations and aircraft maintenance licence holders.[24]		
South Africa (SACAA)	Evidence of recently updated flight engineer licensing requirements(25 August 2023).[25] Evidence of guidance to support applicants for AME licences.[26]	Evidence of incident reporting.[27] Evidence of tip-off/hazard reporting across civil aviation sector,[28] including maintenance specific guidance.[29]	Evidence of non-maintenance related enforcement action against regulated entities (15 March 2023).[30] Evidence of maintenance-related enforcement action against regulated entities (23 March 2023).[31]
USA (FAA)	Evidence of recently updated website guidance on becoming an aviation mechanic.[32]	Evidence of accident and incident reporting.[33]	Evidence of recent maintenance-related quality control enforcement action (24 January 2024).[34]
Canada	Insufficient publicly available information to make an assessment of suitability.	Evidence of incident reporting.[35]	Evidence of published corporate and non-corporate maintenance-related offences on 14 April 2023[36] and 14 February 2023[37]
Fiji (CAAF)	Data provided in annual report on previous year's aircraft maintenance engineer licence issue and renewal.[38] Evidence of recent updates to AMO-related training guidance (May 2022).[39]	Organisations structure indicates specific function relating to airworthiness, and another handling licensing including aircraft maintenance engineer licensing.[40] Publishing of mandatory occurrence reporting for aircraft maintenance-related instances including system/component failure for powerplant and non-powerplant.[41]	Evidence of enforcement actions taken in previous year.
Papua New Guinea	Insufficient publicly available information to make an assessment.	Insufficient publicly available information to make an assessment.	Insufficient publicly available information to make an assessment.

[24] full-caas-ar-fy22-23-26sep23-1607h--(desktop).pdf
[25] SOUTH AFRICAN CIVIL AVIATION AUTHORITY (caasanwebsitestorage.blob.core.windows.net); check list (caasanwebsitestorage.blob.core.windows.net).
[26] Example of Approved Person Logbook Summary.pdf (caasanwebsitestorage.blob.core.windows.net); THE EXAMPLE IS DONE IN DAYS IT CAN HOWEVER BEEN BOOKED IN DAYS, WEEKS OR MONTHS WHICHEVER THE CASE MAY BE (caasanwebsitestorage.blob.core.windows.net).
[27] Final ZS-CAR Accident Report.pdf (caasanwebsitestorage.blob.core.windows.net)
[28] Reporting – SACAA
[29] Aircraft Maintenance.pdf (caasanwebsitestorage.blob.core.windows.net)
[30] Civil Aviation Authority Indefinitely Suspends Comair Flights.pdf (caasanwebsitestorage.blob.core.windows.net)
[31] Civil Aviation Authority Suspends Lufthansa Aircraft Maintenance Organisation Approval.pdf (caasanwebsitestorage.blob.core.windows.net)
[32] Become an Aviation Mechanic | Federal Aviation Administration (faa.gov)
[33] Accident & Incident Data | Federal Aviation Administration (faa.gov)
[34] FAA Halts Boeing MAX Production Expansion to Improve Quality Control, Also Lays Out Extensive Inspection and Maintenance Process to Allow Boeing 737-9 MAX Aircraft to Return to Service | Federal Aviation Administration
[35] TC_2023_Annual_Report_EN_2024-05-29.pdf (canada.ca), p. 40.
[36] Aviation corporate offenders (canada.ca)
[37] Aviation non-corporate offenders (canada.ca)
[38] CAAF ANNUAL REPORT 2022.pdf
[39] Guidance Material - Training AMO_0.pdf (caaf.org.fj)
[40] CAAF ANNUAL REPORT 2022.pdf
[41] To note: SCF-NP (system/component failure or malfunction (non-powerplant) was the highest MOR type besides birds (57 occurrences). Powerplant-related MORs was the 5th highest (9 occurrences).

Pillar 2: Applicant suitability

Component 3: Character

Requirement 3.1.1A: No relevant criminal convictions; or

Requirement 3.1.1B: Relevant criminal convictions with reference from previous AMO-equivalent employer.

For the purpose of assessing the suitability of a foreign licence holder to hold an Australian licence, it is important to include this consideration to:

- **Provide safety assurance:** The primary goal of aviation regulation is to ensure the safety of passengers, crew, and the public. Individuals with relevant criminal convictions, particularly those involving substance abuse or serious misconduct, may pose a safety risk. Ensuring that licence holders have no such convictions helps mitigate these risks.
- **Ensure public trust and confidence:** The public expects high standards of conduct from those responsible for maintaining and operating aircraft. Allowing individuals with serious criminal convictions to hold licences could undermine public confidence in aviation safety and regulatory bodies.
- **Promote professional integrity and responsibility:** While CASA can receive tip-offs about concerns about aviation safety relating to an organisation or regulated entity believed to be unsafe, that requires an individual to be granted a licence and be in the CASA ecosystem. Nothing precludes a foreign AME licence holder from having relevant criminal convictions and working as a LAME in Australia, which has the potential to impact on AME professional integrity as well as individual and collective responsibility.

Where a relevant criminal offence is declared, an applicant is able to submit a letter of reference from previous AMO-equivalent employer attesting to their professionalism and performance despite the criminal offence as a way to not arbitrary punish an applicant for a previous crime, as long as CASA can be assured of their suitability to hold an Australian licence.

Requirement 3.2.1: No relevant workplace dispute with previous AMO-equivalent employer with reference from AMO-equivalent.

When recognising a foreign State granted AME licence, it is important for CASA to understand how the licence was used and the quality of work undertaken by the licensee. To assess whether the applicant is suitable to hold an Australian licence, CASA should consider requiring a foreign applicant to obtain a reference from their previous employer confirming they have not been involved in a relevant workplace dispute.

Examples of relevant workplace disputes are:

- Performance-related issues
- Conflict with AME/AMO regulatory compliance (but not notified to NAA, i.e. caught by safety and quality system of employer)

Examples of workplace disputes that are not relevant to the grant of a licence, and should be left to a prospective employer to assess are:

- Misconduct and ethical violations (e.g. harassment, bullying or other forms of inappropriate behaviour)
- Insubordination (e.g. failure to follow lawful instructions from supervisors)

Component 4: Competency

Requirement 4.1.1: Able to produce foreign licence in application; and

Requirement 4.1.2: Foreign licence verified as authentic by relevant National Aviation Authority.

By requiring applicants to submit their current foreign licence and enabling CASA to verify it with the issuing NAA, this element ensures that all applicants hold a valid and recognised licence from a recognised State. This step deters fraudulent applications and streamlines the application process.

This step also provides CASA with an important touchpoint to engage with the NAA to ask about any relevant non-compliance of the licence holder that CASA may want to take into consideration when determining whether to issue an Australian AME licence.

Requirement 4.2.1A: Applicant passes a bridging exam administered by CASA or an organisation approved by CASA with an acceptable score in core + specific syllabus for licence applied for (category-based licence stream or modular licence stream available); or
Requirement 4.2.1B: Applicant passes a bridging exam administered by CASA or an organisation approved by CASA with an acceptable score in core syllabus for licence applied for but does not achieve required score in certain specific syllabus subjects (modular licence stream only).

Table 5 demonstrates the suggested distinction between core and specialist subjects for the purpose of the foreign recognition framework.

Table 5: Part 66 Manual of Standards 66.A.25 and Appendix 1 Part 2 knowledge requirements and core vs. specialist delineation

Module	Core or Specialist
1. Mathematics	Core
2. Physics	Core
3. Electrical fundamentals	Specialist
4. Electronic fundamentals	Specialist
5. Digital techniques electronic instrument systems	Specialist
6. Materials and hardware	Core
7. Maintenance practices	Core
8. Basic aerodynamics	Core (except modular engine licence)
9. Human factors	Core
10. Aviation legislation	Core
11A. Turbine aeroplane aerodynamics, structures and systems	Specialist but core only for an engine modular licence
11B. Piston aeroplane aerodynamics, structures and systems	
12. Helicopter aerodynamics, structures and systems	Specialist
13. Aircraft aerodynamics, structures and systems	Specialist
14. Propulsion	Specialist
15. Gas turbine engines	Specialist
16. Piston engines	Specialist
17 Propeller	Specialist

Requirement 4.3.1A: Possesses the relevant experience required depending on nature of foreign licence (category-based licence stream or modular licence stream available); or
Requirement 4.3.1B: Possesses minimum relevant experience as a foreign licensed AME (modular licence stream available).

Different basic practical experience requirements are required depending on licence categories and subcategories. The experience requirement can be used in this framework to indicate overall competency where an applicant's basic knowledge is lacking. For example, an applicant who has foreign equivalent of a B2 licence but fails 2 specific syllabus elements in the basic knowledge bridging test would probably still be suitable to hold a category B2 or modular B2 licence if they had 5+ years as a licensed AME in a foreign State.

The proposed "general rule" for this element is demonstrated in **Table 6**.

Table 6: General rule proposed for relevant experience required for each licence category

	A	B1.1	B1.2	B1.3	B1.4	B2	Modular
Foreign AME licence holder practical maintenance experience on operating aircraft	3 years	5 years	3 years	5 years	3 years	5 years	2 years (per licence)

Summary: Operational cheat sheets

Foreign State Assessment

Requirement	Description of requirement	Suggested data sources	Assessment
Requirement 1.1.1	Foreign state's civil aviation laws available in English.	Foreign State NAA website Foreign State consolidated register of legislation (similar to our Federal Register of Legislation)	☐ Yes (Go to Req 1.2.1) ☐ No (end process)
Requirement 1.2.1	Foreign state's civil aviation laws comply with ICAO Annex 1.	Foreign State NAA website ICAO USOAP Effective Implementation scores (from ICAO USOAP scores website)	☐ Yes (Go to Req 2.1.1) ☐ No (end process)
Requirement 2.1.1.	Foreign state's licensing and airworthiness USOAP scores are above the global average.	ICAO USOAP Effective Implementation scores (from ICAO USOAP scores website)	☐ Yes (Go to Req 2.1.2) ☐ No (end process
Requirement 2.2.1	Evidence of active licensing, monitoring and compliance, and enforcement.	Foreign State NAA website including annuals reports, licensing application pages, compliance and enforcement actions pages, published prosecutions and other enforcement activities.	☐ Yes (add to Recognised Foreign State legislative instrument) ☐ No (end process)

Foreign Applicant Assessment

Requirement	Description of requirement	Suggested data sources	Assessment
Requirement 3.1.1	Applicant has no relevant criminal convictions, or relevant criminal convictions with reference from AMO equivalent.	Foreign state police check AMO-equivalent employer reference	☐ Yes (Go to Req 3.2.1) ☐ No (no grant of licence, provide reasons for decision to applicant)
Requirement 3.2.1	Applicant has no history of relevant workplace disputes with reference from AMO equivalent.	AMO-equivalent employer reference	☐ Yes (Go to Req 4.1.1) ☐ No (no grant of licence, provide reasons for decision to applicant)
Requirement 4.1.1	Applicant is able to produce a foreign licence.	Applicant	☐ Yes (Go to Req 4.1.2) ☐ No (no grant of licence, provide reasons for decision to applicant)
Requirement 4.1.2	Foreign licence is verified as authentic by the relevant NAA.	Applicant Foreign state NAA	☐ Yes (Go to Req 4.2.1A) ☐ No (no grant of licence, provide reasons for decision to applicant)
Requirement 4.2.1A	Applicant passes a bridging examination with an acceptable score.	CASA or MTO administered exam	☐ Yes (Go to Req 4.3.1) ☐ No (Go to Req 4.2.1B)
Requirement 4.2.1B	Applicant passes a bridging examination with an acceptable score in core syllabus, but not in specific syllabus subjects.	CASA or MTO administered exam	☐ Yes (Go to Req 4.3.1) ☐ No (no grant of licence, provide reasons for decision to applicant)
Requirement 4.3.1	Applicant possesses the relevant experience required (as per licence type).	Logbook or AMO-equivalent employer records	☐ Yes (Grant appropriate licence) ☐ No (no grant of licence, provide reasons for decision to applicant)

Implementation

Roles and responsibilities

CASA will need to perform the following roles under the new framework:

- **Foreign state assessor** in order to publish a legislative instrument containing the list of recognised states for the purpose of Part 66
- **Applicant assessor** in order to meet the requirements under Part 66 and Part 11 to assess and grant/deny an application for a licence
- **Bridging exam administrator** whether overseeing an outsourced examination delivered by Aspeq or an equivalent service provider, or overseeing an MTO-delivered bridging exam

Regulation change

Regulation 66.015 provides that the Part 66 Manual of Standards can specify a foreign country is a recognised State for the purposes of Part 66. This provides a mechanism to enact the framework quickly, amending the Part 66 Manual of Standard once a list of foreign states has been created.

As the list of recognised States should be periodically reviewed, foreign states that are recognised in the Part 66 Manual of Standards should be periodically reviewed to ensure their enduring appropriateness.

Other options include:

- Creating a specific definition of “recognised State” in Part 66 (either specifically like Part 21, or more generally)
- Creating a power in Part 66 to determine/authorise/permit a list of foreign states to be considered recognised States under Part 66

Legal advice should be sought from Legal, International and Regulatory Affairs on the most efficient approach to enshrining the framework into Part 66.

Strategic communications

Internal communications (CASA assessors, other line areas)

We have suggested some internal communication positioning based on how we undertook the review and framework design.

- **Safety First:** The proposed framework prioritises the safety of Australian skies. Foreign AMEs will undergo a rigorous assessment process, including background checks and examinations, to ensure they meet our high standards before being licensed to work on Australian aircraft.
- **Economic Growth:** Attracting skilled AMEs from overseas will boost the aviation industry, create jobs, and improve productivity. This initiative will also generate employment opportunities for Australians in related fields.
- **Collaboration is Key:** Industry, government, and AMEs will work together to develop and implement this framework, ensuring a robust solution that benefits all parties and addresses workforce challenges.
- **Efficient Timeline:** We are committed to a realistic timeline for implementing this framework, with the goal of quickly addressing the AME shortage while maintaining the highest safety standards. The process will include consultation with experts, collaboration with government agencies, and the development of efficient application procedures.

External communications (AMEs, AMOs, MTOs, broader)

We have also developed a range of messages for external (i.e. industry) communications.

- **Industry Collaboration:** Highlight the strong partnership between the government, regulatory bodies, and the AME/AMO sector in developing a solution that benefits all stakeholders.
- **Safety and Flexibility:** Emphasise the balance between a comprehensive framework and the flexibility to adapt to individual circumstances while prioritising safety.
- **Global Talent:** Showcase Australia as a destination for skilled aviation professionals, offering a streamlined path to licensure and a thriving aviation industry.

Annexes

Annex 1: Example Foreign State Assessment

Foreign State	Component 1: Understanding		Component 2: Confidence			Assessment
	Requirement 1.1.1: Civil aviation laws are in English.	Requirement 1.2.1: Foreign state's civil aviation laws comply with Annex 1.	Requirement 2.1.1: Foreign State's civil aviation practices in licensing and airworthiness are equal to or greater than the global ICAO USOAP Effective Implementation score.		Requirement 2.2.1: Evidence of active licensing, monitoring and compliance, as well as enforcement, especially in licensing and airworthiness.	
United Kingdom	Yes	78.26	Licensing: 56.16	Airworthiness: 65.36	Excellent	**Acceptable for recognition as a recognised foreign State due to outdated EI score**
France	Yes – EASA	100	Licensing: 100	Airworthiness: 100	Average	**Acceptable for recognition as a recognised foreign State**
Germany	Yes – EASA	81.81	Licensing: 91.76	Airworthiness: 91.13	Average	**Acceptable for recognition as a recognised foreign State**
Switzerland	Yes – EASA	91.30	Licensing: 100	Airworthiness: 94.59	Good	**Acceptable for recognition as a recognised foreign State**
Ireland	Yes – EASA	91.30	Licensing: 100	Airworthiness: 99.12	Excellent	**Acceptable for recognition as a recognised foreign State**
Singapore	Yes	100	Licensing: 100	Airworthiness: 100	Average	**Acceptable for recognition as a recognised foreign State**
South Africa	Yes	100	Licensing: 90.91	Airworthiness: 92.41	Excellent	**Acceptable for recognition as a recognised foreign State**
USA	Yes	81.82	Licensing: 92.75	Airworthiness: 96.41	Excellent	**Acceptable for recognition as a recognised foreign State**
Fiji	Yes	61.90	Licensing: 86.30	Airworthiness: 87.78	Good	**Acceptable for recognition as a recognised foreign State**
Canada	Yes	76.49	Licensing: 67.82	Airworthiness: 81.33	Average	**Insufficient publicly available data for recognition as a recognised foreign State***
Papua New Guinea	Yes	95.24	Licensing: 45.56	Airworthiness: 61.32	Insufficient data	**Insufficient publicly available data for recognition as a recognised foreign State***
Mexico	No	86.36	Licensing: 96.67	Airworthiness: 95.31	Average	**Insufficient language alignment for recognition as a recognised foreign State at this time**
Nauru	Yes	27.27	Licensing: 61.11	Airworthiness: 90.28	Insufficient data	**Insufficient publicly available data for recognition as a recognised foreign State***

*CASA may wish to engage with foreign State regulators to obtain data to support a foreign State assessment for these and other States assessed under this framework.

Annex 2: ICAO USOAP Effective Implementation scores

Category	Global Average	Australia (2023)	New Zealand (2016)	United Kingdom (2009)[43]	France (2020)	Germany (2021)	Ireland (2016)	Switzerland (2021)	Singapore (2022)	South Africa (2023)	USA (2007)	Canada (2023)	Fiji (2019)	Papua New Guinea (2023)
Legislation	77.27	100	85.71	78.26	100	81.81	91.30	91.30	100	100	81.82	76.19	61.90	95.24
Organization	71.39	91.67	100	80	100	100	100	100	100	100	100	83.33	62.50	81.82
Licensing	73.32	89.74	98.61	56.16	100	91.76	100	100	100	90.91	92.75	67.82	86.30	45.56
Operations	71.08	80	85.86	58.82	97.96	94.4	97.09	94.12	100	91.67	94.12	22.58	86.27	61.02
Airworthiness	83.24	91.72	90.48	65.36	100	91.13	99.12	94.59	100	92.41	96.41	81.33	87.78	61.32
Accident Investigation	54.16	95.06	74.68	69.56	100	94.29	100	97.06	100	87.65	76.39	86.59	38.89	89.16
Air Navigation Services	65.12	93.69	76.64	54.29	84.11	92.52	92.52	87.74	98.13	92.56	81.90	67.21	79.25	46.72
Aerodromes	63.07	87.29	80.17	88.28	96.75	97.56	83.19	91.23	100	87.69	96.77	64.12	76.15	57.60
Date of last review	N/A	2023	2016	2009	2020	2021	2016	2021	2022	2023	2009	2023	2019	2023

[43] Note: last Effective Implementation score based of former EASA/EU framework. Unlikely to have varied significantly.

Annex 3: Part 66 Manual of Standards 66.A.25 Appendix I syllabus breakdown

Module	Category									B1 Modular				B2 Modular / Extension		
	A1	A2	A3	A4	B1.1	B1.2	B1.3	B1.4	B2	B1.1 / B1.2 aeroplane (airframe)	B1.3 / B1.4 helicopter (airframe)	B1.2 / B1.4 piston (powerplant)	B1.1 / B1.3 turbine (powerplant)	B2 electrical systems only	B2 instrument systems only	B2 radio systems only
1. Mathematics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Physics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Electrical fundamentals	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes
4. Electronic fundamentals					Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes
5. Digital techniques electronic instrument systems	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes
6. Materials and hardware	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7. Maintenance practices	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8. Basic aerodynamics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
9. Human factors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10. Aviation legislation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11A. Turbine aeroplane aerodynamics, structures and systems	Yes				Yes					Yes (B1.1)						

Module	Category									B1 Modular				B2 Modular / Extension		
	A1	A2	A3	A4	B1.1	B1.2	B1.3	B1.4	B2	B1.1 / B1.2 aeroplane (airframe)	B1.3 / B1.4 helicopter (airframe)	B1.2 / B1.4 piston (powerplant)	B1.1 / B1.3 turbine (powerplant)	B2 electrical systems only	B2 instrument systems only	B2 radio systems only
11B. Piston aeroplane aerodynamics, structures and systems		Yes				Yes				Yes (B1.2)						
12. Helicopter aerodynamics, structures and systems			Yes	Yes			Yes	Yes			Yes					
13. Aeroplane aerodynamics, structures and systems									Yes					Various topic 13 subjects	Various topic 13 subjects	Various topic 13 subjects
14. Propulsion									Yes					Yes	Yes	Yes
15. Gas turbine engines	Yes		Yes		Yes		Yes						Yes			
16. Piston engines		Yes		Yes		Yes		Yes				Yes				
17 Propeller	Yes	Yes			Yes	Yes						Yes (B1.2)	Yes (B1.1)			

Annex 4: Issues and Opportunities

Issues and opportunities

The development of a foreign recognition framework was a process that encountered numerous opportunities to innovate, simplify and improve Aircraft Maintenance Engineer (AME) licensing procedures through a range of lenses. However, each opportunity was met with issues that had to be carefully considered and negotiated to design the cleanest possible framework.

Regulatory Alignment and Assurance

- The first step in building the framework was to understand international processes and gauge regulatory alignment and assurance. Within the international system, CASA's high degree of alignment with ICAO Annex 1 states provided an opportunity to simplify the recognition of foreign AMEs and leverage a broad network for mutual recognition. EASA systems are also similarly constructed, allowing for a high level of regulatory consistency and smoother transitions for AMEs between these regions.
- Examining existing foreign recognition systems, such as CAANZ's framework, has given CASA the opportunity to emulate a well-regarded framework while being able to avoid any potential limitations, such as restrictions to domestic type ratings. This entire process has the potential to harmonise regulatory practices with a long-term possibility for AME recognition being integrated into the international aviation system. System-level assurance reduces administrative burden and can make the framework easier to interpret and apply consistently.
- Despite regulatory alignment, the global baseline is fallible. Frameworks that appear similar may be significantly different in practice, due to the maturity and implementation of standards across countries. This could further manifest in differences in workplace structures and job expectations.
- There are also many countries beyond the ICAO Annex 1 standards, with more challenging regulatory frameworks. It would be erroneous to overlook these more complex nations which may be responsible for future aviation advancements or have the availability of AMEs to fill Australian shortages.
- Complexities in the current Australian system could also pose issues to a foreign recognition framework. In particular, the coexistence of CAR30 organisations and Part 145 organisations could create conflicts in regulatory frameworks. Further, supervising requirements on prospective foreign AMEs presents risk at both extremes. A less experienced supervisor observing an experienced foreign AME could lead to morale issues and inefficiencies, while a less experienced foreign AME under an experienced supervisor could strain resources and complicate risk management. A system-level framework like this would place additional regulatory burden on both CASA and Approved Maintenance Organisations, which could create gaps in enforcement and monitoring.

Licensing and Competency

- Even in the establishment of a system—level procedure, technical and competency requirements must be considered. CASA delineates requisite skill into knowledge and experience requirements, which must both be attained by foreign AMEs. Establishing clear theoretical requirements can enable training programs to design curricula that meet Australian standards, thus creating a pathway for AMEs to gain recognised qualifications abroad. An initial streamlining of experience recognition could involve AMOs that operate both in Australia and internationally, with an alternative dedicated apprentice stream for AMEs not employed by the necessary organisations.
- It must be noted that foreign training is imparted differently, whether that is different standards of theory education, or variations in training practices, such as specialisation that fails to equip foreign AMEs with the skills required to fulfil a role in Australia.
- To test knowledge and experience requirements, the current system can be drawn on, with modifications to enhance the foreign recognition process. Such modifications can be adopted from the standards of countries with rigorous reporting requirements and re-accreditation processes. There is also the possibility of an updated assessment style. A dual-pathway training system, which would be based on current domestic self-study could streamline the foreign recognition process. This would utilise country-level assessments to evaluate and trust foreign licensing models and reducing the burden on training organisations.
- Another potential assessment style is a practical and oral delivery method, which is more accurate in assessing skills. Practical assessment can ensure that AMEs receive targeted practical experience, addressing any identified skill gaps and can offer more clarity for assessors regarding the competency of foreign engineers. Longer-term opportunities could engage emerging simulation technologies for a more immersive and realistic assessment. Simulations address the predominant drawback of practical assessment, the resource-heavy strain for assessors, who must conduct these examinations one-to-one. Straining existing capacity can create delays and increased costs, with further co-ordination and resources required. There is also a risk that strong theoretical knowledge may not translate to practical competency, and designing an appropriate practical assessment that accurately measures an AME's skill level could be complex and time intensive. Self-study programs also require precise implementation, to ensure that any foreign programs are robust enough and leave no knowledge gaps. Oversight of these programs is necessary, with clarity required on who owns and validates study materials. Combined, the above factors may add needless complexity to a foreign recognition framework and have been given due consideration.

- Exclusions and partial licences appear to be a promising method of maximising the AME workforce in Australia. By allowing more AMEs to obtain licences, even with certain exclusions, AMOs can increase their workforce and therefore their operational capacity. Partial licences also help organisations mitigate competency risk by ensuring individuals are only certified for tasks they are fully qualified and capable of performing. For AMEs, partial licences offer easier entrance into the Australian workforce. Such licences could be time-limited to encourage completion of qualification, while being simultaneously unrestrictive in recognised areas of expertise. This would also provide a structured pathway for full licensure. The overall attraction of a partial licence is that a licence based on specific competencies, with exclusions is more beneficial than an all-or-nothing approach.
- Partial licences aren't perfect, with over-exclusion posing several risks. This system could inadvertently lead to quasi-specialisation, whereby AMEs are only certified for highly specific tasks, or even excluded altogether, holding redundant privileges. There are also recruitment issues where employers may unfairly overlook candidates based on their exclusions, which could have legal repercussions.

Operational and Cultural Considerations

- Beyond professional expertise, foreign relocation has other operational and cultural shocks that must be managed. Differences in operational procedures and cultural backgrounds may lead to discrimination, which hinders an individual's integration. Past negative experiences or cultural biases can act as a deterrent before application, reducing the potential talent pool. Differences in workplace norms, from tool use to decision making processes, can hinder compliance and operational smoothness. Accommodating culturally diverse employees can be time-consuming and costly, through sensitivity training or support programs. Altogether, the above risks could create frictions in a team of engineers and reduce the effectiveness and efficiency of the AMO.
- If these risks are properly managed, maintenance organisations can benefit from diverse hiring. Integrating foreign AMEs enriches workplace culture, bringing varied perspectives and an inclusive environment. At a technical level, exposure to diverse operating procedures can introduce innovative solutions and more efficient practices, enhancing overall aviation safety.
- Maintenance organisations are a necessary component of the aviation system and must therefore be considered in a new framework. Giving AMOs a greater role in oversight has the opportunity to improve the AME workforce. A licensing stream contingent upon the safety frameworks of AMOs ensures that engineers are integrated into a supportive and compliant environment. This builds on existing safety and oversight mechanisms, providing competency assurance around foreign AMEs. Empowering AMOs and the individuals within them can enable closer supervision of foreign engineers, with more relevant and practical feedback and quicker, more accurate competency assessments. Of course, AMOs are commercial entities, so such oversight may be compromised by business interests, losing subjectivity and thoroughness. Independent audits and conditional licensing could mitigate these risks should they arise.

Practical Challenges and Solutions

- Putting a framework into practice will have its own issues. Out of necessity, to ensure aviation safety compliance, a foreign recognition framework for AMEs will be heavily bureaucratic and costly. However, there are opportunities to streamline current processes with the goal of increased efficiency and lower cost, without compromising safety. One avenue to cheapen foreign AME licensing is by reducing reliance on training organisations. Simplifying certification has a similar effect in reducing administrative and overhead costs.
- There are also indirect bureaucratic risks associated with reputation and image. Changes to the system could be perceived as lowering standards or increasing the difficulty of licensing requirements. Such reputational damage could lead to a loss of trust from key stakeholders domestically and internationally.
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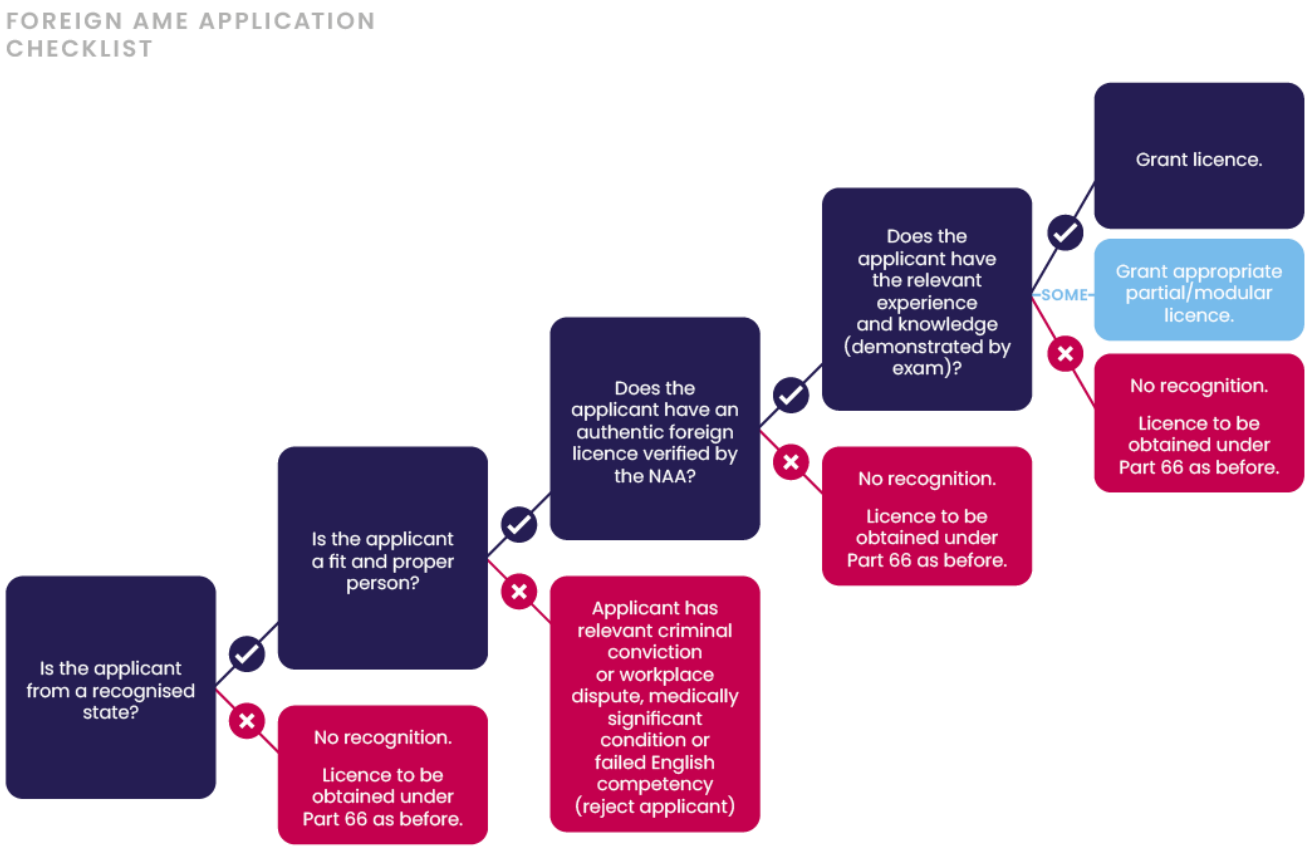
- Throughout the design process for a foreign recognition framework, the aforementioned opportunities and issues have been carefully considered as possible features to impact the AME licensing process. The appropriate opportunities have been further developed while pressing issues have also been analysed to ensure aviation safety standards in Australia are maintained.

Annex 5: Stakeholder consultation register

Date	Stakeholder	Organisation
9 May 2024	Steve Campbell, Michelle Massey, Amanda Palmer, Ben Challender and Sam Palaskonis	CASA
13 May 2024	Ben Challender and Sam Palaskonis	CASA
4 June 2024	Jonathan Aleck	CASA
6 June 2024	Roger Crosthwaite	CASA
6 June 2024	Jeff Boyd	Corporate Air / Link Airways
6 June 2024	David Williams and Brian Fletcher	Rotorfix
7 June 2024	Colin Richards	Careflight
7 June 2024	Sheridan Austin	Aviation QMS
12 June 2024	Ben Challender and Sam Palaskonis	CASA
17 June 2024	Mark Boyle	CAANZ
21 June 2024	Ben Challender and Sam Palaskonis	CASA

Annex 6: Decision tree for approving foreign AME applicants



Annex 7: Decision tree for recognising foreign states