Changes to the Australian and New Zealand Standard Classification of Occupations (ANZSCO)

Submission to the Australian Bureau of Statistics

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ENGINEERS
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Contents

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Introduction

About Engineers Australia

Engineers Australia is the peak body for the engineering profession in Australia, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community. With over 110,000 members nationally we represent a profession that impacts the lives of Australians every day.

As Australia's signatory to the International Engineering Alliance, Engineers Australia maintains national professional standards, benchmarked against international norms. Under the Migration Regulations 1994, we are the designated assessing authority to perform the assessment of potential migrant engineering professionals' skills, qualifications, and/or work experience to ensure they meet the occupational standards needed for employment in Australia.

Submission structure

This submission provides direct feedback to the questions posed by the ABS related to the two information papers.[1] It also provides general comments relating to suggestions for future changes.

Contact

For further discussion about the points raised in this submission, please contact Michael Bell, Senior Policy Advisor at mbell@engineersaustralia.org.au.

[1] Skills In ANZSCO - Options Paper June 2022 & ANZSCO Maintenance Strategy June 2022

General Comments

For the last 12-months Engineers Australia has been undertaking a project looking at the supply and demand of engineering skills in Australia. This project saw the development of a discussion paper which provides an analysis of the shortage of engineering skills currently being experienced in Australia and the influencing factors. Having the data available through mechanisms such as ANZSCO allows for a much clearer picture of the engineering workforce. Engineers Australia welcomes this review by the Australian Bureau of Statistics (ABS) and sees it as a crucial element in assisting to overcome the current challenges facing the engineering profession and the Australian economy.

Suggestions for future changes

While not directly related to the current consultations, Engineers Australia suggests the following should be considered for review. It is also suggested that in future updates, occupations, such as engineering, are grouped together. This will enable a holistic approach in the update, rather than updating certain engineering occupations now, and others later.

A long-standing area of interest for Engineers Australia is the differentiation between 2334 Electronics Engineers and 2333 Electrical Engineers. From an Australian education perspective Electrical and Electronic Engineering is considered a combined Field of Education (0313). The differentiation of the ANZSCO classification leads to challenges when assessing underpinning qualifications for the occupation.

In addition, consideration should be given to potential occupations related to 'sustainability engineering'. The introduction of new classifications in this area are likely to impact university offerings and their professional accreditation to international benchmarks.

Emerging or established areas such as Nuclear, Cyber, Maritime, Rail, Clean Energy and Manufacturing are being considered by Engineers Australia in our work related to areas of practice and specialisations. Ideally, these should also have a set of definitions under ANZSCO, not only for identification but also for the advancement of industry.

There is also a need to review IT and digital technology occupations to ensure they are fit for purpose. One example of this is software engineering. Currently software engineering falls under unit group 2613 Software and Applications Programmers. Software engineering is often considered an engineering occupation and not an IT occupation. Making it an engineering subset or a stand-alone occupation would be more beneficial.

Finally, Engineers Australia is also aware of a submission put forward by the Minerals Council of Australia and their specific call for Automation engineer to be included. Under unit group 2335 Industrial, Mechanical and Production Engineers Automation Engineer is considered a specialisation of 233513 Production or Plant Engineer. Engineers Australia supports bringing that specialisation out to make it a separate occupation. Engineers Australia can provide further guidance on this including the description.

The occupations mentioned above are a small subset of the required updates within the engineering profession. Engineers Australia is enthusiastic about the prospect of continuing to support the ABS on future changes and welcomes the opportunity to continue the discussion.

Skills in ANZSCO

1. **Do you agree implementation of the six options will provide a contemporary representation of skill within ANZSCO?**

   The concerns raised in the skills in ANZSCO paper are all valid. Engineers Australia supports the implementation of the six options and agrees, at a broad level, it will provide a contemporary representation of skill within ANZSCO.

   Engineers Australia believes the proposals are needed (particularly one to three) for ANZSCO to remain relevant, however, a clearer process for engaging industry is required. In addition, to support a more contemporary representation of skills, Engineers Australia recommends the ABS take into consideration ANZSCO's interaction with fields of education and fields of research.

   Proposal 1: Undertake more frequent reviews of ANZSCO's occupations

   Undertaking more frequent reviews of ANZSCO occupations is crucial, particularly for emerging or rapidly changing areas. For example, if you look at engineering disciplines such as Information Technology and Electronic Engineering (ITEE), the technologies change rapidly (every seven years), therefore the skills required and job tasks change. Consideration should be given as to how occupations, such as this, are reviewed in a manner that is appropriate to their changing nature.

   Proposal 2: Ensure all occupations in ANZSCO contain a unique set of tasks and improved consistence of language

   Engineers Australia supports this proposal however there are significant challenges depending how it is to be implemented. There is value to this proposal, however caution is needed to ensure it doesn't create unintended barriers.

   Currently, it can be hard for those utilising the codes to know each occupations tasks. This is essential as it helps to differentiate each occupation within the Unit Group. For example, a migrant seeking an occupation outcome would be able to identify their occupation tasks to know which occupation they would fall in under ANZSCO.

   However, creating tasks for all occupations will be difficult. Within the engineering profession there is cross over between several different engineering occupations. For example, a mechanical engineer working in a specific industry might be able to fit into more than one occupation. Or if you have two identical set of tasks for different occupations, it could cause confusion as to which occupation one falls into.

   Proposal 3: Explore solutions to directly link between each occupation in ANZSCO and its ASC skill

   Engineers Australia agrees there should be consistency between ANZSCO and related areas. There is merit in undertaking this work and exploring solutions to enable a connection between ANZSCO and ASC skills. Engineers Australia also recommends including linking the Australian Qualifications Framework (AQF) into this.

   Proposal 4: Enable customised views of occupations in ANZSCO to support "job pathway analysis"

   This proposal is supported. Jobs today are more multi-disciplinary, undertaking a job pathway analysis would be beneficial, however it would be difficult to undertake accurately. An example of this around emerging areas such as digital engineering which includes all forms of control systems and automation.

   There are many different pathways to this occupation, and it is unlikely they can all be captured. Collaboration with industry and professional associations is recommended.

   Proposal 5: Clarify the existing treatment of employability skills within ANZSCO

   Clarifying the existing treatment of employability skills is supported by Engineers Australia. It is recommended this proposal also draws on other work looking at the desirable global skills.

It should be noted however, while some employability skills are across the board, some (such as manual skills) are not relevant to others. Also, in engineering, some baseline capabilities are part of the accredited program so will already be captured.

Proposal 6: Use alternative terms for "skill level" and "skills specialisation"

Engineers Australia believes this proposal needs to be defined for purpose. For example, do they refer to the breath or the depth of the skill, or both. There is a requirement to make this language more understandable, however getting agreement will be challenging.

2. **Do you have any suggestions regarding how to include micro-credentials and other training outside the AQF within ANZSCO? (Refer section 3.2 of skills in ANZSCO options paper)**

   Greater clarity as to the purpose of including micro-credentials and other training outside the AQF is required. Engineers Australia recommends the ABS consider how micro-credentials can be incorporated through other related platforms. For example, the Department of Education, Skills and Employment is currently looking at how to incorporate micro-credentials into the AQF. Another option would be for the ABS to explore how ANZSCO interacts with other frameworks that include micro-credentials, such as the National Credentials Platform. Currently, it is unlikely micro-credentials would change an individual's occupation. It would be more useful feeding into other recognised qualifications and/or professional development activities within an occupation.

   If micro-credentials and other training outside the AQF were to be included, future updates of ANZSCO will need to be much more agile. Micro-credential programs are often in response to emerging skills and industries and are continually changing, transforming, and re-inventing themselves to adapt to new ways of work and new expectations of work. ANZSCO codes would need to be flexible enough to be inclusive of occupations that haven't been imagined yet but could emerge in the next 12 months. It is recommended any inclusion of micro-credentials and other training would need significant input from all relevant parties including the tertiary sector and professional associations and should be consulted on separately.

   Engineers Australia is developing a way to evaluate micro-credentials through our Program Endorsement Framework (PEF). The Program Endorsement Framework (PEF) provides a structure for education program providers to apply for an endorsement of their education products against defined criteria. It also provides a way for learners to navigate and select in confidence from the vast range of further learning options available to them. Evaluation is done by an expert panel, against criteria which meets and exceeds the National Micro-credential Framework. The Engineers Australia Endorsement Framework can be used to benchmark micro-credentials and validate the learning outcomes and/or prior capabilities which can align to ANZSCO.

   Engineers Australia's subsidiary, Engineering Education Australia is a provider of engineering education and offers micro-credentials to engineers. To support the ABS with exploring this issue we may be able to report to the government on our continuing professional development (CPD), Micro-credentials and other educational products we provide industry now. This would allow the ABS to capture non-regulated qualifications as part of the collection of data aligned to ANZSCO.

3. **Do you agree with the prioritisation of the six proposed options outlined in this paper? (Refer section 4 of skills in ANZSCO options paper)**

   Engineers Australia supports the prioritisation outlined in the paper.

4. **Do you consider implementation of any of the six proposed options more urgent?**

   Proposals two and four may assist in the short term with the current skills shortages being experienced in the market by providing people more clarity on their skill and experience level. It is recommended the skills and occupations in shortage should be prioritised.

Maintaining ANZSCO

Engineers Australia supports the consultation process outlined in the Maintenance Strategy information paper, however, provides the following for consideration by the ABS in its implementation.

1. **Do you have any concerns about the consultation process outlined in the ANZSCO Maintenance Strategy information paper, for example, with the frequency, mode or duration?**

   A plan of work should be developed by the ABS so that upcoming focus areas can be identified by the parties relevant to providing feedback.

   There are emerging occupations which will need to be reflected in ANZSCO and as such, the maintenance strategy should include a process for capturing this future demand. Census data is only provided every five years, meaning a more agile approach, with industry being able to be proactive, providing data-based insights into new occupations needed. Engineers Australia recommends the ABS consider how to enable industry to provide ongoing feedback to assist in future updates.

   The Australian Government's trilateral partnership with the United Kingdom and the United States (AUKUS) including the potential acquisition of nuclear-powered submarines, has highlighted the need for ANZSCO to be able to adapt to fast moving situations. Currently there is no nuclear engineering occupational outcome. Without a strong source of local skills, migrant engineers will be required to fill short term demand. These migrants may be seeking nuclear engineering outcome, which cannot be provided under the current system. Engineers Australia would welcome the opportunity to discuss this further.

2. **Does the ANZSCO update model strike the right balance between timely updates to reflect the contemporary labour market and consistency over time to preserve time series data?**

   Yes, however it is recommended the process is continuously monitored to ensure this balance remains.

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