Overview of Process for Australian Acoustics Standards

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ABSTRACT

The acoustics and vibration committees within Standards Australia have been active over recent years in adopting and revising standards. Much of this work is not obvious to the world outside until there is the announcement of public review document and then the final version of the Australian Standard. This paper will provide a general overview of the operation of Standards Australia in relation to the committees and the introduction of new work projects. The Australian Acoustical Society (AAS) and the Australian Association of Acoustical Consultants (AAAC) have membership on the committees and the AAS has been the lead organisation for some successful projects. A summary of the current and planned activities for some of the committees will be provided along with some of the challenges for the committee members in achieving timely outcomes.

1. INTRODUCTION

Standards Australia has a long history being established in 1922. According to the Strategic Plan, 2016-2020, the Mission and the Vision of Standards Australia are (Standards Australia, 2015): *"To excel in the provision of contemporary, internationally aligned Australian Standards® and related services*."; and to deliver "*widely recognised and demonstrated value to Australia's economic efficiency, trade and international competitiveness and to the community's expectation of a safe and sustainable Australia.".* To achieve these, the stated four "*strategic pillars*" of their operation are: Reputation and Brand; Engagement and Performance; Finance and Governance; and People and Culture.

For the majority of users of Australian Standards, be they government organisations specifying compliance requirements, manufacturers or suppliers required to meet the details of the standards or the acoustics industry checking for compliance, there is little understanding of the process and work that goes into the production of the documents that they are trying to work through. This paper is not intended to be a full review of the production of standards but an overview the processes of Standards Australia from the position as a member of a number of acoustics related committees.

2. THE ROLE OF STANDARDS

The Standards Australia explanation of a standard (Standards Australia, 2016) is

Standards are documents setting out specifications, procedures and guidelines. They are designed to ensure products, services and systems are safe, reliable and consistent. They are based on industrial, scientific and consumer experience and are regularly reviewed to ensure they keep pace with new technologies. They cover everything from consumer products and services, construction, engineering, business, information technology, human services to energy and water utilities, the environment and much more.

This highlights that Australian Standards, in keeping with International Standards, are not legislated documents that must always be followed. They can and are referred to in various government legislation, regulations, policy, guidelines etc. These references can be to part or the whole of the published standard. Only in rare cases do they include "numbers" as their role is to provide the process to determine values. So for example a standard relating to the measurement of the sound absorption properties of a material would include the detailed requirements for the test environment and the test sample frame, the testing process, the required reporting details and means for assessing uncertainty in the findings. Then the same sample tested in conformance with the standard should result in the same findings wherever it is tested. Of course this does not mean that when actually installed the sample will provide the same performance!

The two basic criteria considered by Standards Australia in development and revision of standards via the

committees are the net benefit and the stakeholder support. There is a clear preference to adopt or make minor changes to an International Standard if a relevant document exists. Each standard is worked on by a balanced committee to ensure representation from those with knowledge of the topic from technical, business, academia, government and community backgrounds. Every new and revised standard goes through a public comment stage before final acceptance.

3. ACOUSTICS AND VIBRATION COMMITTEES

The committees with participation by either representations from Australian Acoustical Society (AAS) or the Association of Australian Acoustical Consultants (AAAC), range across a number of the industry sectors with the Standards Australia system. A summary of the committees with allocations for representation by AAS and/or AAAC is given in Table 1. Not all committees are active and not all committees that have some involvement with sound and vibration have AAS and AAAC representation. Some other committees, such as CS-018 on Safety of Childrens Toys and CH/26 Safety in Laboratories, may have committee members who have some expertise in acoustics but these are not specifically identified as committee members representing the AAS or AAAC. Such committees may also seek advice from independent acoustics experts, often this is via AV-003.

Table 1: Listing for the committees with allocations for representation by AAS and/or AAAC

Nominating Organisation	National Committee
Units symbol	AV-001
Instrumentation and Measurement	AV-002
Acoustics Human effects	AV-003
Architectural Acoustics	AV-004
Machinery Noise	AV-006
Office Equipment	AV-007
Vibration and Shock Applications	AV-009
Community Noise	EV-010
Vibration and Shock Human effects	AV-010
Aircraft Noise	EV-011
Wind Turbine Noise	EV-016
Machine Condition Monitoring	ME-087

Each committee has a committee chair but the administration is driven by Standards Australia. As well as the intermittent work on Australian Standards, all the documents produced in relation to the aligned ISO committee are distributed to the committee for comment, for recommending the Australian voting or for noting. The chair of the committee should consolidate the comment from the members and advise Standards Australia accordingly. It is very relevant to note that participation in committee work is voluntary and that the majority of the committee are still active in the industry. It is now rare that companies or organisations include Standards Australia work as part of the recognized duties of their employees.

4. INITIATING NEW AND REVISING AUSTRALIAN STANDARDS

In the early days the committee would decide on initiating a new standard or when it was time to revise/update a current standard. Following reviews of the Standards Australia operations it was decided that a project prioritisation and selection process would be a more effective use of the resources. There are two main pathways through this system: one is resourced by Standards Australia and the other externally funded. As there is generally no benefactor for work on acoustics standards they usually go through the Standards Australia resourced

routing. There are usually two rounds per year for the project prioritization selection; one during February/March and the other August/September. After a few months those responsible for the successful proposals are advised and a few months later the project commences. Identical text adoption of an ISO standard does have a somewhat more streamlined process.

Submitting a proposal is not something that is taken lightly and the person leading this task needs to be able to allocate considerable time. It is vitally important that proposal details and scope are carefully produced for, if successful, these then becomes the definition of the extent of the project. If subsequently some obvious changes are found to be needed in other sections these cannot be considered if they are outside the scope of the approved work project.

The need and net benefit and harmonization and alignment with relevant documents need to be identified. The assessment of risks and dependencies requires a thorough knowledge of the impact of changes in the standard on other allied documents which may cite to the Standard. The compilation of the stakeholder support requires evidence of contact with, and approval by, representatives from organisations that can be considered to fit within each of the groups listed in Table 2. An Appendix to the proposal requires a Project Complexity Matrix.

Table 2: Listing of key stakeholder groups that need to demonstrate support for the proposal.

Key stakeholder groups
Research and academic organisations
Consumer interests
Government organisations
Regulatory and controlling bodies
Technical associations
Professional associations
Manufacturers' associations
Suppliers' associations
User and purchasing bodies
Testing bodies
Auditing bodies
Certification bodies
Employer representative bodies
Unions and employee associations
Independent
New Zealand

Once a proposal has been approved and a new work project initiated, Standards Australia then reviews the committee, nominates the person who will have the primary responsibility for the revised/new document (usually the chairman) and arranges for the committee 'kick off' meeting. The committee then works on creating the revised or new document leading to the public review. The process to participate in the public review is quite tedious. First for someone outside the committee to see the document it is necessary to create a log into the website. Then all comments must be submitted on line in the required format and include specific recommendations for revision. This of course makes it easier for the committee to consider as the comments are ordered in relation to the sections of the standard. The committee considers all the comments and there is a record of the action against every comment. Further revisions are made, approval by the committee received, further drafting work within Standards Australia and finally the revised document is produced.

5. SOME RECENT ACOUSTICS STANDARDS

The proposals for revised or updated acoustics standards usually go via the pathway resourced by Standards Australia. This means that once successfully through the project prioritization Standards Australia allocates the time of a Project Manager to the task of arranging meetings, advising and maintaining all the administration requirements, arranging the public review process and finally keeping track as the final version goes through the production process. Face-to-face meetings of the full committee are uncommon these days so mostly these meetings are held with some key members present in the same room and others calling in on conference calls. Despite the challenges of keeping track of the sequence, discussions via email are common once there is an almost final draft version for consideration.

The first acoustics standards that I am aware went through this current process related to direct text adoption of ISO human vibration standards (Standards Australia 2013a, b). Two related to hand arm vibration and the third was adoption of an amendment to an ISO standard relating to whole body vibration. AAS was the nominating organization for these and some of the subsequent proposals for which the need has been identified by AAS members. Since then the successful completion of projects include the updating of AS/NZS 1269.4 on occupational noise management (Standards Australia 2014), updating of AS 2021 on aircraft noise (Standards Australia 2015c) and the production of a handbook with guidance on producing information on aircraft noise, HB 149 (Standards Australia 2016). Projects in process are revision of AS/NZS 2107 (Standards Australia 2000) which is close to completion and the revision of AS 1055 parts 1, 2 and 3 (Standards Australia 1997a, b, c) which is still in the early stages.

6. SOME CHALLENGES

There are good reasons for the process adopted within Standards Australia especially as it has to be able to demonstrate that there is a clear consensus from stakeholders and committee members. The process also leads to attention to detail, which of course is important in a standard, but sometimes this means the ultimate user of the document may not be adequately considered.

At the outset of a project a time frame is established with the goal that each project is brought to a timely conclusion. However the work on standards is an extra task in what is usually an already full workload for the committee members. The best intentions at the outset may need to be put aside when a major project comes up. Thus the momentum in the work can be lost with delays between the receipt and response to documents.

The public comment stage is an important step in producing a standard. It is a little challenging to get the information on the availability of the draft document to those who can contribute. Then the procedure to submit comments is not easy to work through. For those working on the review it is disappointing when valid comment is received but cannot be considered because it is outside the scope of the approved project.

Once a new or revised standard has been produced, Standards Australia does promote this via their newsletter. It is up to other means of communication to get the message out to the wider professional community. The AAS plays a role by including this information in the news and notes section of its journal. However it is still a challenge for each professional to keep themselves aware of the public review and final documents.

The current structure of Standards Australia committees does not allow for easy creation of new committees to deal with new issues. For example, standards dealing with the processes for measurement and assessment of noise underwater have only begun to be produced by ISO in recent years. While it is unlikely that there would be project proposal to develop an Australian Standard dealing with underwater noise, it is important that the ISO documents for review go to those who have experience in the topic area. However these documents are directed to committees where the majority of members are experienced with sound in air and not underwater.

A common complaint among committee members is email overload and the difficulty in identifying those that actually need prompt attention. This is further accentuated by the automatic system cross posting of non-relevant ISO documents as there is not full alignment between ISO and Standards Australia committees.

There are many standards that have acoustics as only one component and these are dealt with by other committees which may or may not have acoustics expertise. Examples include the committees dealing with safety of blasting and those dealing with personal electronic devices. It is up to the chair of the committee to decide if the document they are working on should be referred to a committee with acoustics expertise. This does work reasonably well for some committees and for new or revised Australian Standards as mentioned in section in Section 3 above. However such attention to detail is not as well applied generally and there have been recent

examples, particular in the adoption of ISO standards, where this has not been done and the opportunity to properly address acoustics aspects in accord with current Australian practice has been overlooked

7. CONCLUSION

Up to date and relevant standards on acoustics are essential to ensure standardization across government, industry and consulting. Observations from the viewpoint of a Standards Australia committee member are provided in this paper. The current processes for introducing new and updating existing standards have been discussed in this paper along with a summary of the recent work on acoustics standards .

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