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# THE ASSET JOURNAL



ASSET MANAGEMENT COUNCIL

## SYSTEMS, SUSTAINABILITY, ADAPTABILITY

Implementing an Asset  
Management system in a  
Mature Workplace Culture

Building an Asset  
Management System  
Framework

Sustainable Asset  
Management: A Case Study  
of Drought-Time Water  
Usage in SE Qld





## ERNST KRAUSS

EDITOR IN CHIEF

AMPEAK is getting close. No doubt you already made arrangements to participate in this important Conference about all aspects of Asset Management. Key topics are this year about sustainability and systems enabling Asset Management. While many that begin the Asset Management journey are clear about the need for continuation and sustaining the system, often it is encountered that the appetite for continuing on the Asset Management journey is short lived. In my observation of Asset Management System implementation, it is not always clear why an Organisation wishes to implement an Asset Management System. This creates uncertainty and insecurity with those that are to deliver this System. It is of greatest importance to understand the "WHY" of Asset Management in an organisation, which then provides the opportunity to capture the way forward that leads to real sustainability. It also means that there needs to be a strategic view of the development of the Asset Management System.

The promise of sustainable benefits requires clarity in all aspects of the Asset Management System and the reasons for implementation. This promise is influenced by many internal and external influences that can at times not be anticipated, but their impact could be mitigated through ensuring a sustainable future. Market research, clarity of technology adoption and changes in societal needs are influences that challenge many organisations and their Leadership teams.

We currently experience an exciting step into new technology territory through the Internet of Asset Management, the Internet of Maintenance, and similar developments, bringing integrated design and operations closer to reality. Adaptive thinking and direction setting is a difficult concept to implement but is an important part of an Asset Management System and to ensure its sustainability. Adaptive thinking is in itself a concept that encourages option evaluation, an important part of the Asset Management delivery. Business flexibility in anticipation of changes and market conditions to avoid reactive adaption to new situations that result in market share losses or creates competitive disadvantages will be of increasing importance. If we implement Asset Management as a business improvement system and use change management principles to create the understanding across the organisation, the signs are good that sustainability will be achieved. The added ingredient of adaptive processes will further ensure success. This edition of the Journal explores these critically important topics. We trust you enjoy the content and encourage you, as always, to provide feedback. Please come and say hello to the Journal team when you visit AMPEAK in Hobart.

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# FROM MY DESK: CHAIRMAN'S LETTER

**CHAIRMAN,  
DAVE DAINES**

As we approach our National Conference AMPEAK, it is timely to reflect upon the status of asset management within Australia and the International landscape.

In my role of the Chair for the Australian Mirror Committee for ISO 55000, I was fortunate to attend the recent face to face meeting in Paris. With over 30 countries being an opportunity was taken on the Saturday following the meeting to have an International Workshop whereby delegates got to talk about what was going on in their respective countries.

I represented the Australian viewpoint and spoke about the developing strength of the JAS-ANZ Accredited certification process and the number and breadth of organisations considering certification or compliance with the Standard. Given the interest at Federal & State level now it is fair to say that there is a lot of momentum being generated.

I believe that the Asset Management Council and its members can be rightfully proud of the work that it has done in getting the level of interest and acceptance of Asset Management to where it is in Australia.

Other countries were demonstrating a high level of use of the Standards either through certification or compliance, with the Netherlands being the standout in their use. It was also evident that there is a long way to go in developed countries such as the USA & Canada where the infrastructure is deteriorating but the political climate is preventing much co-ordinated activity. Consequently the focus of Asset Management related associations is on lobbying Government to take action.

The global interest in Asset Management was again demonstrated at the Global Forum in Maintenance and Asset Management (GFMAM)

which has attracted another two societies from Japan and Belgium. Meanwhile the World Partners in Asset Management (WPiAM) has attracted another 3 affiliate members from Japan the Middle East and Sth Africa and realises a steady increase in the number of CAMA certificates being taken up around the world. In each of these two groups, the AM Council is strongly represented and is playing a key role in developing and supporting asset management within Australia and overseas.

I look forward to catching up with (hopefully) a large number of you at AMPEAK in Tasmania and spending some time talking about these activities



# ARTICLE 1 – IMPLEMENTATING AN ASSET MANAGEMENT SYSTEM IN A MATURE WORKPLACE CULTURE

Sean Reeves, Reeves Group Services  
Stuart Horvath, Hunter Water Corporation

**Summary:** While the requirements of ISO55001:2014 Asset Management are the same for every organisation, the approaches used to implement an effective asset management system are not. All organisations have unique characteristics, dependant on, for example, size, industry, activity and leadership. The maturity of the organisation is one such characteristic. This paper outlines the approach being used to develop and implement a new asset management system in an organisation that has had an asset management framework in one shape or another since the 1880s.

Critical aspects of this approach include targeted, organisation-wide communication, training and change management. Addressing the needs of the project from a risk perspective is also a key element.

**Keywords:** asset management, asset management system (AMS), risk, communication, awareness, training, stakeholders, legacy, documentation, interface, assurance.





## INTRODUCTION

In 2014, Hunter Water's leadership committed to implementing an asset management system consistent with ISO 55001:2014 by mid-2017. The implementation of a new management system is more than the development of processes and documentation. It requires changes to the culture in which it will operate for it to provide the intended benefits.

Hunter Water is a state-owned corporation providing water and wastewater services to over 500,000 people. It covers 5,366 km<sup>2</sup> across the local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, Dungog and parts of Singleton in New South Wales, Australia. Operations began in the 1880s and its current asset base has a gross replacement cost of \$10.0bn (July 2016).

Hunter Water is made up of five divisions: Customer Service, Finance, Planning and Operations, Corporate and Legal, and Information and Communications Technology. The primary stakeholders and main users of the asset management system sit within the Planning and Operations division. This division currently consists of six functional groups: asset management, planning, infrastructure development, system operations, civil maintenance, and electrical and mechanical maintenance.

Over 40% of the workforce at Hunter Water has been employed by the organisation for more than 10 years. Most employees are passionate about the service they provide their local community, and all have been working within a dependent asset management

culture for many years. [1]

## AN INTEGRATED MANAGEMENT SYSTEM

Hunter Water is presently certified to three management system standards:

- ISO9001:2008 – Quality Management System (QMS)
- ISO14001:2004 – Environmental Management System (EMS)
- AS4801:2001 – Work Health and Safety Management System (WHSMS).

These form part of an Integrated Management System (IMS) where the common elements of these standards are "shared" across the organisation. The new Asset Management System (AMS) will be Hunter Water's fourth management system. A number of IMS processes already meet AMS certification requirements in their current format. This has been a valuable starting point for the AMS, in that many individuals have an understanding of the requirements of a management system and some existing work practices are aligned with common IMS elements.

The IMS is structured in a way that consolidates the common elements of the management systems to avoid duplication and promote consistency. Some of these elements are:

- roles, responsibilities and authorities
- competency, awareness and training
- documented information management

- investigation and analysis management
- internal audit
- contractor and supplier management.

## ASSET MANAGEMENT SYSTEM

Hunter Water currently has an asset management framework to optimise the life cycle of its physical assets. This framework holistically considers the functions relating to service management, asset life cycle and business support systems. These functions and supporting documentation are being revised and updated to form the new AMS.

The scope of the new AMS incorporates both physical assets and the asset management life cycle activities required to provide water, wastewater, recycled water and stormwater services, customer services and compliance.

## PERCEPTIONS AROUND PREVIOUS PROJECTS

Perceived legacy issues from the implementation of the other management systems has resulted in the documentation for some work group processes largely being developed and managed in isolation of the IMS. In addition, because many work practices and processes have remained constant for a number of years, reviews or updates are rarely initiated by the group. (However, regular assessment of risks triggers revision of certain documentation as necessary.)

Consequently, a risk identified for the AMS project is the potential for the AMS to be seen as yet another “campaign” that adds effort to the daily workload. To address this, the project aims to increase awareness of how the AMS will support each group’s work functions (rather than be a burden) and that they still own and are responsible for their processes. Training will be rolled out to help team members find information relevant to their roles, reducing the time spent looking for documentation and ensuring consistency of outcomes across different teams and locations.

## ASSET INFORMATION

A parallel project linked to the AMS is helping to define and improve the quality of the data that makes up Hunter Water’s asset information. To assist with providing clarity, asset information is being viewed from a provider’s and from a user’s perspective, as well as from an accessibility perspective. The various stakeholders of the AMS have different requirements for information, and also need to be aware of how this information is used. For example, providers of data must understand the role they play in generating the information that others rely on for decision-making. In addition, experienced team members are a source of information that needs to be documented for consistency and knowledge sharing.

## PROJECT MANAGEMENT METHODOLOGY

The development and implementation of the AMS is being managed as a standalone project. This has permitted the engagement of a dedicated project manager and the separation of the technical elements of asset management from the broader scope. Key aims of this approach include consideration of the lessons learnt from the implementation of the existing management systems, and the breaking down of the project into digestible packages of work.

**As shown in Figure 1, the three principal scopes of work are:**

1. technical processes and supporting documentation
2. system storage, user interface and awareness training
3. project plan, resources and reporting.

## PROJECT RISKS

Project risk assessments were carried out at the commencement of the project and are reviewed regularly. A number of risks are focused around the timing of the project and the daily workload of the key stakeholders. Other significant risks involve similar issues to those which affected previous projects to implement management systems. A summary of approaches to mitigating some of the risks is shown in Table I.



**Figure 1:** Principal scopes of work in the development of the asset management system

RISK	MITIGATING METHODOLOGY
Tight timeframe to obtain certification	Focus on consolidating and updating documentation from existing processes to meet ISO 55001. Identify gaps in current processes and develop documentation. Focus on providing improved value to Hunter Water.
Competing priorities for stakeholders involved	Consult closely with stakeholders and understand their constraints. Look to streamline and support as much as possible. Escalate where needed. Provide additional resources to supplement constrained internal resources.
Legacy issues from previous projects	Educate teams on current IMS processes that will be updated and also form part of the AMS, and the benefits of this approach.
Lack of user awareness	Introduce different levels of training as appropriate, across the organisation. Focus on how work teams' existing processes now fit into the AMS.
Lack of accessibility of documentation	Establish an environment of transparent communication that is aligned with work activities rather than AMS functions. Publish links to the latest versions of documentation on a structured intranet site, the navigation for which follows the work practices of the groups involved.
Change in business strategy	Monitor any changes to policies etc so the AMS remains in alignment with organisational strategies.

**Table 1:** Methodologies used to mitigate AMS project risks

## DELIVERABLES

While the key deliverable for the project is obtaining certification to ISO55001:2014, implementing processes that help Hunter Water achieve its goals for customers and the community is the primary objective for the AMS. Obtaining certification requires the development of documentation for the processes that form the AMS and evidence that the system is being used. Documentation from existing processes is currently being collated and aligned with AMS requirements. New documents are being developed for long-standing work practices where gaps exist. Many tasks have not changed over the years and related documentation is

now being assembled to fit the structure of the new AMS.

Considerable effort is being made to ensure that access to AMS documentation is quick and easy. Hunter Water's intranet site will be used to facilitate this access. The main AMS interface on the intranet is being structured according to a "user experience" approach to web design, following the work practices of the groups that will be interacting with the system. A portion of regularly-used information is already located on various pages on the intranet. Each link on the intranet is to the latest version of the document which is centrally located in Hunter Water's document management system, considered "the single source of

truth". Guidance for navigating the site will be included in the training rolled out across the organisation.

Given the tight timeframe, it has been agreed and understood that the project will be delivering "Generation One" of the AMS. This will be a significant step change, particularly in how documentation is accessed and controlled, giving the end user assurance that the live documentation is the current version. This approach also leaves room for continuous improvement.

## RESOURCING

The project team has been assembled for specific skill sets across the various deliverables. Specialists have been secured for some areas relating to technical aspects of ISO55001, for instance, change management and stakeholder engagement. Additional specialist support has been provided for the development of training material and the AMS intranet interface.

A significant benefit to the project has been the engagement of a team of technical writers. The writers have provided expertise and value for the revision, review and development of concise, effective, quality documents that are logically structured and written in plain English. Information in the heads of experienced employees has been documented to a certain degree over the years, and a number of these documents are being revised into controlled documents. The controlled status gives users assurance that the published document on the intranet is the latest revision. It also helps avoid potential incidents arising from inconsistent procedures.

## STAKEHOLDERS

AMS stakeholders are both internal and external to Hunter Water. Internal stakeholders include the functional groups within the organisation which provide services for each other, as well as over 450 personnel comprising both employees and contractors. A large proportion of the workforce already interacts with many processes that will make up the AMS.

Primary users of the AMS sit within the Planning and Operations division; however, key areas in other divisions, such as Finance and Customer Service, also have an impact on or are impacted by the new system. Considerable time has been spent consulting with internal stakeholders, understanding their constraints and the issues relating to their engagement with the system, while raising their awareness of the AMS and how it will benefit them.

External stakeholders include customers, regulators, shareholders, the community and service providers. Work groups such as customer service, procurement and infrastructure delivery have high levels of involvement with external stakeholders and now will be working within the AMS.

### Leadership

The executive management team (EMT) has supported and influenced the development of the AMS. They have developed and endorsed an asset management policy that is well-communicated throughout the organisation. The EMT also endorses and participates in supporting activities that promote the implementation of the system, and has agreed on the engagement of resources to deliver the project and coordinate the activities of the AMS once fully implemented. Visible support from the EMT is critical in the establishment of the new AMS in a workplace with heavily embedded existing work practices.

### Steering committee

An AMS steering committee has been established to provide governance over the project and long-term direction of the AMS. The committee is made up of the key stakeholders from the Planning and Operations division as well as representation from the EMT. This leadership provides guidance on the content for the AMS and helps promote awareness across the groups that regularly interact with the AMS.

### Awareness

Important issues identified during engagement with the stakeholders have been around the awareness of the new system and how it will impact the way they deliver asset management objectives. Some of the stakeholders will have direct input and influence on the content while others will seek information from the AMS. Awareness training has been identified as a requirement for both internal and external stakeholders, depending upon their level of involvement with the AMS.

### Process ownership

A number of groups – some of whom are key stakeholders – that sit outside the asset management group have well-developed documentation to support their immediate functions. Many of these processes now form part of the AMS, even though owners of some of the processes will have very limited exposure to or regular interaction with the AMS.



Influencing those groups in relation to their inputs is a challenge being managed through AMS awareness. The key AMS stakeholders are encouraged to maintain ownership of their processes even though they now form part of the broader AMS. This also helps demonstrate how their activities influence the other functions of the AMS.

### Competing priorities

While the AMS project is being implemented by the asset management group which sits within the Planning and Operations division, the AMS will impact each of the other groups within this division. These groups will also be significant contributors to its content. This range of contributors has resulted in issues with reviewing content introduced by others to meet the requirements of certification. The review process and a tight project deadline combined with usual daily tasks places pressure on document reviewers. Again, awareness of the importance of a useful, functioning AMS plays a role in securing cooperation regarding these additional work requirements. The use of a formal document review workflow (currently in SharePoint) is also assisting with managing the review process and keeping review responsibilities “top of mind” via automatically-generated emails and deadline reminders.

## CHANGE MANAGEMENT

Change management has been considered from two separate points of understanding – technical and organisational – each having a considerable influence on managing the risks associated with the implementation of the AMS.

A technical management of change methodology has been followed to consider risks relating to any updates to processes during the development of new documentation.

An organisational change management (OCM) process has been followed to address risks with implementing a new system into the organisation. The OCM has been considered a sub-project of the main AMS implementation, with similar stages as the parent project (scope, timeframe and deliverables). Communication of the reasons for the change – regulatory compliance plus the benefits of a management system – has been driven by the EMT, again demonstrating their commitment to the project. It is vital to create the understanding that each group retains ownership of and is responsible for maintaining their processes and is now also part of the larger AMS.

## COMMUNICATION

The AMS project identified a number of benefits of basic communication around the new system across the organisation, with different communication methods needed at various stages and milestones of the project. Understanding the needs of the stakeholders has been the primary focus for the development of the different types of communication. Consistent key messages ensure that team members understand how the AMS will affect them, and feedback is obtained by the project team.

### Different audiences and languages

The communication type and language used differs for the various target audiences – some require less detail and more of an overview, and each needs to focus on different aspects of asset management.

A project intranet page facilitates communication about the project status and the team, as well as general information for those who want to be kept up to date.

Bi-monthly corporation-wide newsletters are distributed via email and include articles on a specific topic from the AMS project. The project branding and communication style for the newsletter is consistent for each edition, and repetition assists with reinforcing key messages about the AMS.

## TRAINING

Training has been identified as a large component of the implementation of the AMS. Communication efforts around the project to date have created an initial awareness of the forthcoming system while waiting for the development and delivery of the training. One aim is to have the training for the AMS rolled out, to the relevant level of detail required, as an expectation of each employee's annual achievement plan. Organisation-wide AMS basic awareness training will be the minimum requirement.

The training is being developed using a three-tiered approach to ensure users and stakeholders have sufficient knowledge of the AMS and how it impacts them in their daily work. The three tiers introduce more detail to the users based on how involved they are with the system.

- **Tier 1** – a generic awareness training package for the entire organisation. This will be added to the general training for the IMS and be part of the induction of new starters and contractors. Tier 1 training includes the basic theory of asset management within Hunter Water and how the AMS helps manage its assets.
- **Tier 2** – provided to teams within the Planning and Operations division that will interact with the system in their everyday activities. The training includes roles and responsibilities and detail on how the AMS is developed to manage asset-related risks across the life cycle.
- **Tier 3** – a detailed package of how ISO55001 is influencing the AMS at Hunter Water and how their roles are responsible for creating and updating information contained in the system. This level is aimed at team members in the asset management group and will also assist with the “onboarding” of new team members.

## CONCLUSION

While the project is implementing a certified AMS, Hunter Water considers this “Generation One”, and some elements are further advanced than others.

The implementation of the AMS has been facilitated as a standalone project. This structured approach is enabling the technical aspects of the processes and associated documentation to be managed in parallel with the practical elements of developing the user interface, training personnel and maintaining compliance.

A wide range of stakeholders is involved so effective communication is critical. Awareness of the new AMS across the organisation helps ensure that those who own the processes that influence the AMS consult the asset management group whenever there is a need to change.

Maintaining a close alignment with the IMS utilises the common documentation already in place, and provides an opportunity to update its key processes, saving time and effort for all management systems in the longer term.

## REFERENCES

[1] J. R. Lafraia and J. Hardwick, *Living Asset Management*, Sydney: Engineers Media, 2013.



## ARTICLE 2 – BUILDING AN ASSET MANAGEMENT SYSTEM FRAMEWORK

Paul Catton, AMCL

**Summary:** An asset management system is a set of complex processes and interactions to plan and control asset related activities. The asset management system framework, whilst not an explicit requirement of ISO 55001, sets out to help define what the organisations functioning asset management system looks like. In doing this, the framework diagram provides insight into the key processes and documents that ensure the asset management system effectively achieves the organisational objectives.

This paper explores how asset management system frameworks are being applied by various organisations in developing and enhancing their asset management system. The paper also outlines an approach to develop an asset management system framework along with key messages when developing an asset management system framework.

**Keywords:** asset, management, system, framework, ISO 55001

## INTRODUCTION

Organisations have faced unrepresented disruption in recent years, resulting in initiatives to improve their performance, cost competitiveness and risk mitigation. This has led to the increased emphasis on the area of asset management and greater awareness of how improved asset management contributes to reining in costs, more prudent capital spending, elimination of waste, increased asset availability and improvements in safety.

Subsequently organisations are focussing on how they can improve their asset management practices, with an increasing number of organisations seeking compliance to ISO 55001. This requires them to define how asset management is undertaken within their organisation and to clearly define their asset management system (AMS).

This paper outlines the reasons why organisations would develop an asset management system framework and how an organisation could approach the development of their AMS framework.

## WHAT IS AN AMS FRAMEWORK

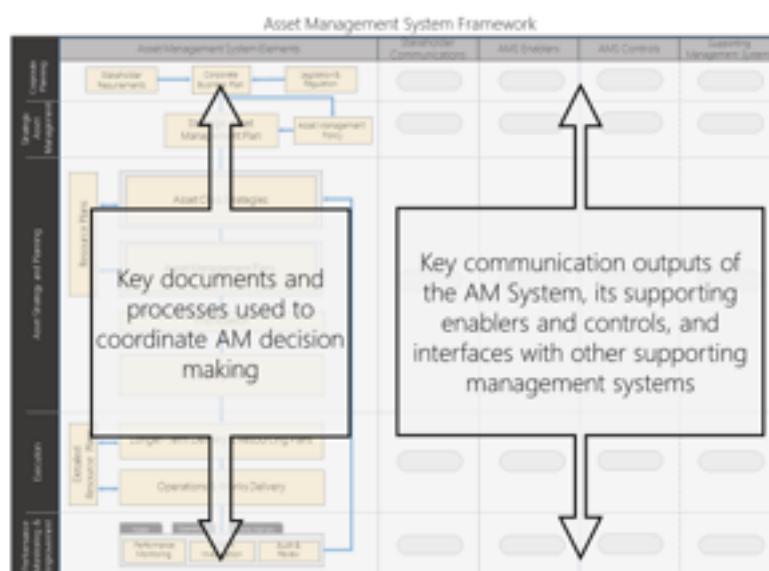
An asset management system as defined by ISO 55000:2014 is a “set of interrelated or interacting elements to establish asset management policy, asset management objectives and processes to achieve those objectives” [1]. Typically, an organisation’s AMS will cover all

activities relating to the proper maintenance, augmentation and disposal of fixed and other asset as defined within the scope of the organisation’s asset management system.

An asset management system framework documents the set of components that provide the foundations and organisational arrangements for the management of assets in a manner that supports the achievement of the asset management objectives. The asset management system framework typically ends up being a comprehensively developed one-page graphic which illustrates the key processes and artefacts and their relationships prevalent in the organisation which relate to its AM System. Figure 1 illustrates a typical framework structure including the key asset management documentation and processes, and the enablers and controls and supporting interfaces with other management systems.

The AMS framework is notionally established into a grid format, promoting swimming lanes. The vertical lanes covering the various areas of asset management decision making (i.e. corporate planning, strategic asset management, strategy and planning, delivery, and performance monitoring and improvement) and the horizontal lanes covering the AMS elements (the key documents and processes used to coordinate asset management decision making) and the other key elements that support the AMS framework; these being communication, enablers and controls and supporting management systems.

To supplement the asset management system framework graphic additional documents including governance arrangements, interface diagrams and a description document are developed.



**Figure 1** – Typical Asset Management System Framework



The governance arrangements show how governance is applied across the various levels of the business and across the lifecycle of asset management decision making.

The interface diagrams schematically show the functions that interface with the AMS and what these interfaces entail. Interfaces with other management systems are also shown including details of how these systems are integrated.

The description document provides definitions of each element of the AMS, provides references to additional artefacts and documents, and acts as a guideline as to how the AMS functions.

The detail and complexity of the asset management system framework will depend on the size and complexity of the organisation and the purpose of the framework. Larger more complex organisations are more likely to have numerous policies and processes when compared to smaller more simple organisations. The reasons for developing the framework will also influence the detail to be included in the framework. For example, a high-level AMS framework is more suitable to allow executives to quickly understand the purpose and function of the organisations asset management system.

## WHY DEVELOP AN AMS FRAMEWORK?

Ideally an organisation would develop an asset management system framework when it is at

the start of its asset management journey because at this point an AMS FRAMEWORK will provide the greatest benefit, in particular providing clarity as to what is an AMS. Organisations with a well-established AMS are still able to gain benefits from defining an AMS framework, in particular helping to define future improvements.

Typical reasons for developing an asset management system framework are outlined below.

- I. **Define AMS Scope.** The AMS framework, whilst not an explicit requirement of ISO 55001, is an excellent tool to demonstrate the scope of the asset management system. The AMS framework provides a clear visual representation of the activities that are within scope from the reference of the documents, processes and procedures that make up the AMS. The AMS framework also defines the business functions which are in or outside of the AMS and how the AMS interfaces with the functions that are out of scope.
- II. **Provide consistent understanding.** The AMS framework helps to define what the organisations functioning asset management system looks like in the form of a graphic. This graphic can then be used to effectively communicate to internal and external stakeholders raising the awareness of the AMS, its role, and how stakeholder contributes to achieving the asset management objectives.

It also makes them aware of the key documents and processes used to coordinate asset management activity within the organisation and the supporting documents that enable and control decision making within the AMS. Without the clarity provided by a structured framework, there is a risk that asset management practices are not being applied or they are being applied inconsistently. Effective communication not only raises awareness it also provides understanding, adoption of and commitment to the asset management system.

- III. **Alignment.** One of the fundamentals of asset management as defined by ISO 55000 is the need to have alignment between the organisational objectives and asset management decisions, plans and activities. The AMS framework supports this alignment by guiding activities to ensure there is alignment; vertically and horizontally across the organisation.

The framework achieves vertical alignment by defining the document hierarchy of strategies and plans that link to the organisational objectives and guide the asset lifecycle activities required to deliver these objectives. Without this alignment, there is a risk that strategies and plans are developed in isolation resulting in activities that do not contribute to achieving the organisational objectives.

Asset management system is a set off interrelating and interacting elements, therefore

changes to the system need to consider their effects on the system as a whole. Changes need to be coordinated within the AMS and with other management systems in order to achieve the organisational objectives. For example, the selection of an asset needs to consider not only the acquisition and construction activities but also consider the impact on operations, maintenance and disposal. Indeed, the success of an asset intensive organisation often depends on its ability to coordinate activities efficiently and effectively. AMS framework supports horizontal alignment by defining the key processes and documents that enable this collaboration, along with defining how the AMS interfaces with management systems and functions that reside outside the AMS.

IV. **Continual improvement.** Developing the AMS framework should be viewed as part of the organisations continual improvement around the

suitability, adequacy and effectiveness of how it conducts asset management and its asset management system. The organisation is able to use the AMS framework to assess the maturity of the asset management system's elements, processes and relationships, and the identification of improvement opportunities.

V. **Define Roles and Responsibilities.** The AMS framework identifies the elements that constitute an asset management system, using this information an organisation is able to identify the required roles and responsibilities. The elements can be further analysed to determine the activities and effort required by the AMS as well as the benefits gained from these activities. This can help an organisation justify the activities and resources required.

## DEVELOPING AN AMS FRAMEWORK

A generic process for developing the asset management system framework consists of four stages as illustrated in Figure ii.



**Figure ii:** Generic Stages for Developing an AMS Framework

**Stage 1: Agree Design Principles.** The first stage in developing the AMS framework is to set out the design principles with key stakeholders that will be used to guide the decision-making throughout the AMS framework development. These principles should address as a minimum the following questions:

- Will the framework depict the current state or a future state?
- Will the framework be developed bottom up (i.e. based on existing documentation) or top down (i.e. typical requirements of an AMS)?
- What level of detail will be included within the framework?

**Stage 2: Draft Framework.** A draft framework is developed in the form of a high-level diagram illustrating the key elements and interactions between them. This framework is developed through consultation with key stakeholders and reviewing of key documents.

**Stage 3: Detailed Framework.** Workshops are held with relevant stakeholders to verify the direction of the draft framework and identify further documented procedures and processes used within the organisation to enable detailing of the framework. At this stage the framework can be assessed to identify any gaps against the requirements of ISO 55001 or industry specific requirements.

**Stage 4: Support Documents.** Further workshops may be conducted at this point to identify and review key interfaces and governance arrangements. The outcome from these workshops is the development of interface and governance graphics. The final step is to combine the AMS framework and support graphics into an asset management system document description. The description document also includes explanatory text to clearly define each element of the framework.

## LESSONS LEARNED

Based on the experience in developing AMS frameworks the author has learnt the following lessons to make the development of these framework more successful.

**Requires leadership commitment** – the development of an AMS framework is a major organisational initiative, as such it needs appropriate sponsorship to be successfully implemented and sustained. Given its importance and strategic nature, the development of an AMS framework requires strong and sustained commitment by the organisation's leadership.

**Adopt an integrated management system approach** – using an integrated management systems (IMS) approach allows an organisation's asset management system to be built on elements of its other management systems, such as for quality, environment, health and safety, and risk management. Building on existing systems can reduce the effort and expense involved in creating and maintaining an asset management system. It can also improve integration across different disciplines and improve cross-functional coordination. An IMS approach can lead to shortened times to implementation and in addition can reduce cost, risks and improves acceptance of the new system. Asset management, because it interfaces with so many parts of an organisation, is a natural candidate for an integrated systems approach.

**Engage the organisation** – if an integrated approach is not taken then as a minimum, representatives from across the organisation are to be engaged during the development of the AMS framework. If the AMS framework is developed by a select few then it is likely to lack the necessary detail and accuracy, and will make gaining acceptance from across the organisation more difficult.

**Keep it simple** – once the AMS framework is developed it needs to be communicated to internal and external stakeholders. To enable effective communication the framework work must be simple. Avoid the temptation of presenting every single document but rather limit it to the major documents that influence asset management decision making and outcomes.

**Continually improve** – to ensure the AMS framework remains relevant and useful will largely depend on the extent to which it is continually improved. AMS framework needs updating to meet changing organisational context and new leading practices, this will ensure that it remains fit for purpose and will provide value to the organisation.

## CONCLUSION

An asset management system consists of a set of complex processes and interactions to plan and control asset related activities. An AMS framework provides structure and clarity around these interactions by clearly representing the activities, relationships and mechanisms required to enable asset management to effectively and efficiently achieve the organisational objectives. Without an asset management system framework organisations struggle to define the scope of their asset management system or clearly demonstrate their asset management system. If an organisation is attempting to implement their asset management system or is looking to achieve ISO 55001 certification being unable to define the asset management system is likely to result in an undesirable outcome.

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A man in a dark suit and red tie is running across a vast, cracked, and dry landscape, likely a salt flat or a parched field. He is holding a black umbrella over his head. The ground is a mix of light brown and tan, with deep, irregular cracks forming a network across the surface. In the background, a calm blue sea meets a bright blue sky with scattered white clouds. The overall scene suggests a metaphor for drought and the need for sustainable asset management.

## **ARTICLE 3 – SUSTAINABLE ASSET MANAGEMENT: A CASE STUDY OF DROUGHT-TIME WATER USAGE IN SOUTH EAST QUEENSLAND**

Dr Monique Beedles  
Teak Yew



There are many ways in which asset management interacts with sustainability. Asset management principles are critical to achieving sustainability targets, such as more resource efficient manufacturing and transport systems. Asset management also has an essential part to play in managing our natural resources and providing essential services, such as water and energy.

Asset managers face many challenges that are related to sustainable outcomes. For example, in the water sector challenges, such as how to make recycled water more palatable to the public, or how to convince people not to flush baby wipes down the toilet, are critical to the success of sustainability initiatives. Many of these challenges require significant cultural change, which can be difficult to initiate and sustain. An excellent example of how behavioural change was achieved on a large scale, without using financial incentives, was the reduction of water consumption in South East Queensland during a period of extended drought.

During the so-called 'Millennium' drought, dam levels in South East Queensland (SEQ) reached record low levels and the region's water supply was under threat.

An estimated 29% of household water usage is from showers (McCullagh, 2017). Therefore, changing shower habits had the potential to significantly impact total water consumption. In 2007, reducing the average shower length from 7 minutes to 4 minutes would save 36 litres of water per shower (Barrett, 2007).

In many cases the market is the appropriate mechanism to drive changes. Usually, if something costs more, people will buy less of it. However, in this case the marginal cost of 36 litres of water was not sufficient to induce people to take shorter showers. An externality, something which is outside the control of the market (in this case the weather), had led to market failure. The market alone could not deliver the desired outcome for the welfare of the community. In these cases, governments will often make a policy decision to introduce a financial incentive or penalty. This applies the neo-classical economic principle that 'people respond to incentives' (Joshua Gans, 2014). An example is imposing a tax on cigarettes to reduce the prevalence of smoking.

Level 6 water restrictions did apply in SEQ during the drought. Fines were issued for breaking restrictions, such as washing your car, or hosing your lawn. However, it is impractical to enforce shower times, without intrusive privacy implications. So, instead of imposing a tax or a fine, the authorities in SEQ provided each household with a free 4-minute shower timer.

This approach was a recognised success. In 2002, SEQ's per-resident daily water consumption was 292 litres. At the height of the drought, residents reduced this daily consumption to 140 litres. Despite full dams and eased restrictions, water consumption has never returned to pre-drought levels. In 2015, per resident daily usage was 156 litres. (Rodgers, 2015)

Since we can't explain the 4-minute shower phenomena with orthodox neo-classical economic principles, another explanation is required. Behavioural economics provides some insights into questions that don't fit the orthodox economic model. In this case, the behavioural economic principle is that 'people want to feel involved and effective' (New Economics Foundation, 2005). Psychology studies have shown that the most important factor in whether people behave in an environmentally friendly way is 'personal control' defined as 'the extent to which participants felt their actions could benefit the environment' (Kaplan, 2000).

The shower timers were delivered to letter boxes and additional timers were freely available. These factors were important because they reduced the transaction costs, including time and money, for people to participate. However, people were under no obligation to use the timer. Therefore, people felt they had some power or control in the situation.

This is a paradoxical response, which directly conflicts with the 'people respond to incentives' principle. It's easy for individuals to feel that they have no control over an environmental factor like weather and drought. However, through simple actions, like taking a shorter shower, people felt that they were doing their bit to alleviate pressure for the whole community. Likewise, people feel more in control when fewer choices are available (Kaplan, 2000).

Therefore, a clear instruction to 'limit your shower to four minutes' and a simple tool to help them measure this, reduced people's anxiety and empowered them to take action. This approach contrasts with a vague instruction such as 'use less water'.

If the authorities had tried to enforce strict shower times, this may have led to clandestine water use, in an attempt to evade the penalties. Instead, the change in habits brought about by this campaign have extended well beyond the initial crisis and these habits are now being passed to the next generation, as parents teach their children water conserving behaviours.

We can learn from this example in designing our systems to encourage preferred behaviours that drive cultural change for sustainable outcomes. Behavioural economic approaches can be useful in asset management, to create value for stakeholders. Active engineering of choice architecture is an approach that policy makers can use to initiate and sustain cultural change. For further reading, Richard H Thaler, winner of the 2017 Nobel Prize in Economics, and his colleague Cass Sunstein have explored the research on these ideas in their book *Nudge*.

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# 2018 AMPEAK

ASSET MANAGEMENT COUNCIL INTERNATIONAL CONFERENCE

**SUNDAY  
15 APRIL TO  
WEDNESDAY  
18 APRIL  
2018**

**WREST POINT,  
HOBART, AUSTRALIA**

**[www.ampeak.com.au](http://www.ampeak.com.au)**

## EMPOWERING SUSTAINABLE CHANGE

**AMPEAK18** is a world leading asset management conference and features a range of exhibits, case studies and technical content from all industries.

**AMPEAK18** will present the latest research and technology and explore the big issues facing asset management.

Learn from the best, participate in our workshops and interactive sessions, talk to exhibitors and network with asset owners and professionals across all industries.

### Conference topics include:

- Leadership and Culture
- Technology and Innovation
- Sustainable Asset Management Planning
- Measuring Sustainable Impact

Measuring Sustainable Impact  
Shared Value of AM to community and organisations  
Equipping yourself and your workforce for a sustainable future  
Legal Aspects of Asset Management  
ISO55001 and Asset Management

### HOBART LOCATION

The conference is being held at the iconic Wrest Point in Hobart. You won't want to miss our Gala Awards night located at Glen Albyn Estate, stunningly perched above the shores of the Derwent River.

### NOMINATE YOUR ORGANISATION FOR AN AWARD

Nominations are available in a range of categories and close 9 March. Awards will be presented at the gala dinner.

### MORE INFORMATION

Visit [www.ampeak.com.au](http://www.ampeak.com.au), follow us on Facebook and Twitter or connect with us on Linked In.

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# Tutorial 13

## Acquisition Competency Elements

### INTEGRATED SUPPORT

Integrated support comprises all the support needed for the asset to deliver the requisite output, namely:

- Maintenance;
- Spares;
- Data and information technology;
- Finance;
- Packaging, handling and support; and
- Training.

**Figure:** Acquisition in the Capability Delivery Model



Integrated support has inherent characteristics that affect two major performance aspects of the ownership of equipment. Firstly, how long it is 'alive' for – often measured as mean time between failures which defines

the reliability of the asset; and secondly, how long it is 'dead' for – often measured as mean down time or the maintainability of the asset.

These two design-inherent performance characteristics of reliability and maintainability will determine the availability of the equipment. Regrettably, each and all of the integrated support elements affect both reliability and maintainability.

For example, the spares that are procured will affect how often a system dies and when it does die, how long it takes to 'bring it back to life' again. If multiple spares have not been bought or are stored far from the item, then mean down time will be longer. If the spares are of poor quality, or stored incorrectly they may not last as long and the mean time between equipment failures will be shorter. This same influence on both reliability and maintainability is a characteristic of each one of those support elements – all affect reliability or maintainability in some way.

This integrated approach is intended to assure that necessary support is available on the first day of service so that on the second day of owning the asset, if there is a failure, the spares, employees, facilities and tools are available to fix it. The necessary support is available to achieve the inherent

design capabilities of that equipment. Both operations and maintenance functions require similar support elements. For example, the operations function will need simulators, will need manuals and training and will certainly need people, etc.

### CREATE AND DISPOSE

The create and dispose process incorporates measures to ensure that the:

- delivered asset meets the operational and business needs of the organisation and can be maintained in a safe and effective condition throughout its life, as specified in specification and request for tender documentation produced in the previous stage;
- final design or delivered product is verified and validated against the specified requirements using systems engineering and quality assurance processes and procedures;
- disposal process is completed, for major asset disposals in line with the disposal plan; and
- project objectives are achieved with minimum risk.



These tasks may be conducted by different organisations depending on the acquisition method selected. Either way, the end user must manage its risks by assuring that the processes followed represent good practice no matter who is contracted to deliver them.

This stage has important implications for safety and environmental management and for ongoing support costs. Disposal must be considered during acquisition and the implications of selected materials and design solutions on life cycle cost clearly identified. Short life systems subject to regular obsolescence should have a disposal plan costed into the acquisition program.

Disposal does not simply represent a decision to stop using the asset. Only when full owner accountability has ceased and the asset is removed from Technical Maintenance Plans and the equipment register can the equipment be regarded as fully disposed of. This will also include the disposal of all supporting capability that is dedicated to the disposed asset. Retention of some risk and FMECA data could be required under the State legislation.

Deactivating or disposing of infrastructure assets often involves maintaining it in a safe condition (nearly always because not all hazards relate to the item being used) before it can finally be removed, but after it is no longer in active use.

Disposal may include managing a particular site or equipment, such as a decommissioned bridge with significantly changed operational functions. These could include local community use, environmental management requirements, or operating in line with Government heritage requirements.

Asset disposal should be considered when the asset is in the earliest stages of planning. The costs of disposal can be recognised early and provided for in future budgets. Additionally, a superseded asset and its support provisions are removed from service and from the inventory at the appropriate time to manage risk and reduce cost of maintaining unproductive inventory.

**Example:** To establish the required maintenance tasks, an understanding of the functional requirements of the asset together with the expected modes of failure is essential.

Good practice is to use FMECA as the starting point to understand failures and assign the appropriate maintenance tasks preventing the consequences of failure.

Without the knowledge of the functional failure, its effect and criticality to the business, planning of maintenance cannot be effective and can lead to misunderstood reasons for maintenance and ultimately to inefficient management of the maintenance plans.

# The Asset Management Systems Model is being updated

The Asset Management Systems Model and its companion model. The Organisation Management Systems Model, represents the AM Councils view on the elements of an asset management system and how it fits into the broader organisational management system framework respectively."

It is designed to provide asset managers with a definition of what the "elements" in the ISO 55000 definition of an asset management system (shown below) might be.

An asset management system is a set of interrelated and interacting elements of an organization, whose function is to establish the asset management policy and asset management objectives, and the processes, needed to achieve those objectives. In this context, the elements of the asset management system should be viewed as a set of tools, including policies, plans, business processes and information systems, which are integrated to give assurance that the asset management activities will be delivered.

Since its release in 2014 though, there have been significant advances in not only management systems but also the asset information management. Whilst the CMMS or MIS might have always been there, new developments like the internet of things (IOT) and digital

information management or building information management (BIM) have increased their profile. There is now formal recognition of the role BIM plays in Asset Management through the release of PAS 1192 series of standards; asset information management is now irrefutably part of the asset management landscape.

Recognising this, the AM Council is launching an update to the Asset Management Systems Model to formally acknowledge its contribution to the management system. The words "Asset Management Information" now appear within the orange area of the AMSM as shown below. Their location was chosen to allow asset management information to fully encapsulate all elements of the management system from

decision making to performance monitoring and improvement and is linked to the asset management objectives, organisational objectives, leadership and stakeholders.

The new element **Asset Management Information** also creates a framework for future developments of Digital Engineering or BIM within the AM Council. (diagram below)

Any enquiries concerning the model can be directed to the AM Council AMBoK Executive Commissioner, Michael Killeen [michael.killeen@amcouncil.com.au](mailto:michael.killeen@amcouncil.com.au)

**Michel Killeen**  
AMCouncil Executive  
Commissioner AMBoK





## A CERTIFICATION BODY'S APPROACH TO ISO 55001:2014 CERTIFICATION

Jeremy Leu, Certification Manager, Bureau Veritas

Bureau Veritas gained accreditation by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) to certify organisations against the ISO 55001:2014 standard and issue JAS-ANZ accredited certificates in May 2017. Since then Bureau Veritas has worked with multiple organisations as part of their compliance journey.

### WHAT DOES IT MEAN FOR A CERTIFICATION BODY TO BE ACCREDITED BY JAS-ANZ FOR ISO 55001 CERTIFICATION?

Being accredited by JAS-ANZ means Bureau Veritas, as a Certification Body, has been independently assessed to evaluate our capabilities, policies, procedures and systems in place when certifying

organisations against the requirements of ISO 55001:2014. This process of accreditation assures Bureau Veritas' "impartiality, competence and consistency"<sup>1</sup>.

The JAS-ANZ approach to ISO 55001 certification requires the Certification Body to ensure that the audit team can demonstrate a high level of asset management system knowledge, understanding and working experience. This is in line with the Competency Specifications (2014) set by the Global Forum on Maintenance and Asset Management (GFMAM) – background prerequisites include qualifications with in-depth knowledge across disciplines of asset management plus general business experience of at least 5 years<sup>2</sup>. Furthermore, this level exceeds the requirements of ISO/IEC 17021-5 to provide value add for the organisation seeking certification.



# THE ISO 55001 CERTIFICATION PROCESS

An overview of the certification cycle can be seen below:

In line with JAS-ANZ requirements and our internal procedures for ISO 55001:2014 certification, there are two important elements, which as a combination, facilitate a value-added certification process – our auditor competence and the planning phase. Right at the onset of Bureau Veritas’ engagement with a prospective ISO 55001 certification client, we must work to understand the asset portfolio. Bureau Veritas utilises a number of channels to capture important information relating to the asset type, industry, size and complexity. Initially, we ask for the Application Form to be completed and returned along with the organisation’s Strategy Asset Management Plan (SAMP). This provides key insights into the nature of the assets and the complexity of the system which will then be considered in order to determine audit specifics i.e. the audit team selection, the audit duration and sampling approach.

## AUDITOR COMPETENCE

Asset Management System auditors go through a stringent qualification process and are highly competent with extensive industry experience. As per GFMAM requirements (previously mentioned) audit teams will have at least one member who has the Certified Asset Management Assessor (CAMA) qualification with asset experience in the same industry sector as the organisation being assessed.

The audit team shall have the necessary competence to cover the asset management audit scope and may include experts to provide input where necessary.

## PLANNING PHASE

Once the audit team has been selected, the audit will be scheduled in consultation with the client’s representative to ensure that it considers the client’s scope of activities, associated asset portfolio, and operational environment. This planning phase of the audit will help to identify and ascertain focus on critical business issues of the organisation. It is important for the client to make the audit team aware of any significant changes to the SAMP.

## QUALITY APPROACH

To ensure high quality and consistency Technical Experts for Asset Management Systems are engaged throughout the certification process in the following activities: Contract Reviews, Technical Reviews of Reports, Review of Corrective Action Plans and Root Cause Analysis. Technical Experts can only conduct the Technical Review for client’s which they have not been part of the Audit Team.

To comply with JAS-ANZ requirements and internal procedures, Technical Experts are required to demonstrate experience and knowledge inherent to specific asset and industry sectors, and have a CAMA qualification.







## CASE STUDY: CERTIFICATION OF CAREY MINING PTY LTD

Carey Mining Pty Ltd (Carey Mining) provides mining, civil and training services to clients in the resources sector. They have a strong proven track record working directly with major mining companies in Western Australia. As a 100% Indigenous owned organisation, Carey Mining's vision is to create new horizons and push the boundaries for Indigenous business while working with partners, clients,

and broader community stakeholders to generate long-term sustainable outcomes.

Carey Mining identified Asset Management as one of the key aspects for adding value to the business. This value is realised by improving asset availability and utilisation while decreasing the cost of maintaining assets. This is achieved through improving equipment reliability and proactive maintenance practices over the long term with the safety of employees being paramount.

### The Certification Journey

Carey Mining engaged Bureau Veritas to certify their Asset Management System against the ISO 55001:2014 standard as part of their continuous improvement process. The main drivers behind gaining certification were to match and exceed client requirements and to gain a competitive advantage when tendering on mining and civil contracts.

Carey Mining's ISO 55001 certification covers the provision of asset management for mobile, fixed and auxiliary plant and equipment utilised in earthworks, crushing, screening and processing at sites operated by Carey Mining.

### Preparation for the Audits

Prior to the audit activities, Carey Mining engaged with all staff for them to understand the process. As an organisation, they use audits as an opportunity to understand whether their practices, methods of implementation and ways of working could be improved through the sharing of constructive feedback and reasonable recommendations for continuous improvement.

### Benefits of a Certified Asset Management System

Aligning their Asset Management System to the international standard, helps to give Carey Mining confidence in their focus on sustainable operations and the techniques used to improve dimensions of overall equipment effectiveness, reliability, capability and quality – throughout the lifecycle of the equipment.

For an effective asset management system, Carey Mining have recognised that buy in and support is required from each department that interacts with the maintenance team, especially operating teams which are financing assets and signing off associated CAPEX.

Since achieving ISO 55001:2014 certification, there has been an increased emphasis on effectively managing assets company wide. The increased awareness of how assets are managed, through training and certification, has had a positive impact in the business.

Following on from the audits, an asset management module has now been added to the Carey Mining corporate induction. This module introduces new employees and contractors to Carey Mining's asset management approach right from the onset of employment with the group.

Furthermore, this asset management approach has increased clarity for a number of departments including maintenance, finance, procurement, HSE and human resources on what is expected with asset management.

### Challenges Faced

The challenges faced linked to competing client expectations and business priorities. Carey Mining already have other ISO certifications; each with their own internal and external audit calendar.

## REFERENCES

<sup>1</sup> IAF (2011) 'Why use an accredited certification body' [www.iaf.nu](http://www.iaf.nu) page 2

<sup>2</sup> GFMAM (2014) Competency Specification for an ISO 55001 Asset Management System Auditor/Assessor First Edition, Version 2 [www.gfmam.org](http://www.gfmam.org)





# Certified Asset Management Assessor Exam

Discussion by Dave Daines, Director WPiAM

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Detailed below are the requirements from the various International & National organisations involved in the field of asset management, specifically in auditing / assessing.

As will be shown, the purpose of the CAMA exam is to be able to demonstrate that an individual has a level of knowledge and understanding of asset management to be able to assess / audit asset management systems.

## ISO REQUIREMENTS

With the advent of ISO 5500x series of Asset Management Standards, an approach was made to the ISO Committee on Conformity Assessment (CASCO) to provide additional requirements to **ISO 17021:2011 Conformity assessment – Requirements for bodies providing audit and certification of management systems**. The purpose being to provide additional requirements in relation to the auditing and certification of the Asset Management System Standard (ISO 55001)

Consequently, **ISO 17021-5 Competence requirements for auditing and certification of asset management systems** was written.

Within the document it clearly states that - Personnel involved in asset management certification activities shall have the generic competencies described in ISO 17021:2011 and the asset management knowledge described in Clauses 5 and 6. Whereby Clauses 5 & 6 state –

**5 Competence requirements for the asset management system audit team and those reviewing the audit report and making the certification decision.**

### 5.1 Asset management terminology, definitions and principles

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge and understanding of:
  - terms, definitions and asset management principles as contained in ISO 55000 and their application;
  - the interaction between financial and non-financial (including technical) decision making;
  - application of financial management principles relevant to asset management.

### 5.2 Asset management practices, activities and methodologies

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge and understanding of relevant asset management practices, activities and methodologies, and their application.

**NOTE** Asset management practices, activities and methodologies usually involve a balance between technical, non-financial and financial aspects and can include the following:

- a) asset registration practices;
- b) decision-making and prioritization processes;
- c) asset management-related tools and methods;
- d) life cycle costing (LCC) approach;
- e) risk management approaches;
- f) capital, operational and maintenance planning and implementation;
- g) statistical sampling techniques.





### 5.3 Asset management system standards and normative documents

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge and understanding of:
  - a) relevant asset management system standards (ISO 55000, ISO 55001) and other normative documents used in the certification process and different audit situations;
  - b) the application of relevant asset management system standards, including ISO 55002;
  - c) the interaction between the elements of the asset management system standards and other relevant documents.

### 5.4 Business management practices

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge and understanding, as appropriate, of:
  - a) approaches to determine asset value to the organization;
  - b) outsourcing

### 5.5 Client business sector

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge, understanding and application, as appropriate, of terminology, processes, technology and asset types specific to the client sector.

### 5.6 Client products and services, processes and organization

- The audit team and those reviewing the audit report and making the certification decision shall have knowledge, and understanding, where applicable, of the client's:
  - a) legal, regulatory and statutory requirements;
  - b) key contractual or other stakeholder requirements;
  - c) asset management activities and their relationship with other organisational activities;
  - d) performance monitoring and measurement.

**NOTE** Specific knowledge of the above requirements is expected to be obtained during stage 1 of the audit.

### 6 Competence requirements for other personnel

- Other personnel shall have knowledge and understanding of products, services and asset types specific to the client sector.

**NOTE** Other personnel are those conducting the application review to determine the required audit team competence, to select the audit team members, and to determine the audit time.

# Certified Asset Management Assessor Exam

Discussion by Dave Daines, Director WPiAM

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## GLOBAL FORUM OF MAINTENANCE & ASSET MANAGEMENT (GFMAM) REQUIREMENTS

The GFMAM developed a Competency Specification for an ISO 55001 Asset Management Auditor / Assessor. This document was created to form the basis to assure the competence of people who audit or assess organisations to ISO 55001. These competency requirements conform to the requirements and recommendations and ISO 17021-5 Competence requirements for auditing and certification of asset management systems and ISO 19011:2011 Guidelines for Auditing Management Systems and are derived from the Asset Management Landscape.

## WORLD PARTNER IN ASSET MANAGEMENT (WPIAM) REQUIREMENTS

The WPiAM developed the Certified Asset Management Assessor (CAMA) Exam from the GFMAM Competency Specification. As stated on their website (<http://wpiam.com/about/about-cama.html>) -

The CAMA certification establishes an individual's credentials in asset management knowledge and comprehension, globally.

The certification is conducted in accordance with ISO 17024, and complies with

- GFMAM Specification, GFMAM Competency Specification for an ISO 55001 Asset Management System Auditor/Assessor, First Edition, version 2 English Version
- ISO 17021 Part 5: Competence requirements for the certification of asset management systems

There are prerequisites for the certification-

Applicants must:

- have a minimum 5 years of working experience in asset management;
- provide a resume/cv; and
- complete a professional profile.

The professional profile is used to demonstrate compliance with ISO 17021-5 Competence requirements for auditing and certification of asset management systems. This requires auditors to have experience in certain industry types and asset classes, which is why this certification requires a professional profile.



## JOINT ACCREDITATION SOCIETY OF AUSTRALIA & NZ (JAS-ANZ) REQUIREMENTS

The JAS-ANZ are the authority that determine the criteria and accredit Certification Bodies to audit against Management Systems Standards.

In their document, Requirements for bodies providing audit and certification of Asset Management Systems they clearly identify the following –

### 7.1 Competence of management and personnel

#### 7.1.2 Determination of competence criteria

- J.7.1.2 The CB shall have a process for demonstrating that personnel involved in the management and performance of asset management system audits as described in ISO/IEC 17021, Annex A, Table A.1, satisfy the requirements of ISO/IEC TS 17021-5.

### 7.2 Personnel involved in the certification activities

- J.7.2.5.1 In addition to J.7.1.2, the certification body, shall ensure that the audit team, either one person or the team as a whole, has demonstrated the knowledge and comprehension specified in the GFMAM, Section 4, GFMAM Competency Specification for an ISO 55001 Asset Management System Auditor/Assessor.

**NOTE:** A Certified Asset Management Assessor (CAMA) certification is recognised by GFMAM Member bodies as demonstrating an auditor's knowledge and comprehension.

- J.7.2.5.2 The CB shall have a process for ensuring that the audit team, either one person or the team as a whole, has sufficient skills to deal with the range, volume and complexity of the critical assets contained

in the SAMP. Informative Annex D refers

It should be noted that a number of International Certification bodies including, Bureau Veritas, Lloyds, DNV, BSI and SAI have or are in the process of gaining this accreditation.

The above information identifies the CAMA examination as more than demonstrating knowledge and understanding of the ISO 55001 standard and that it is an Internationally recognised means of fulfilling the requirements of ISO 17021 and ISO 17021-5 within the field of asset management.

# CHAPTER NEWS

## WHAT'S HAPPENING IN THE BRISBANE CHAPTER?

**Thanks to all who took the time to fill out the short survey that was sent out because the Brisbane guys have tailored a great line for 2018 up especially for you. Ron and the rest of the Brisbane Chapter have been busy hustling and rustling up presenters for regular future events, kicking off in the third week of March. You can expect to come along to hear some fine presentations on topical matters such as:**

- Digital Engineering in Asset Management
- Asset Management in Power Distribution Operations
- Public Transport Operation of Assets
- Asset Management in Defence

Brisbane has formed a strong, solid committee and is looking to recruit more committee members to join their team. They currently have openings in a number of positions and all will be revealed during their March AGM. Look out for announcements of some fresh faces in the next Journal.

## WHAT'S HAPPENING IN THE HOBART CHAPTER?

Hobart was the site of an exclusive breakfast, held in February, for executive leaders, their asset management subject experts and AMCouncil guests and members. We had senior people from all walks of life taking the time to discuss some of the key issues that their businesses seem to be facing around asset management. Some takeaways were:

- Aging Assets – how do we manage the liability?
- Reliability – building systems, data and skills to undertake assessments.
- Leadership/Culture – driving the AM mindset from the top down, and across the whole business. This in turn relates to education/awareness programs.

- Training/Skills – the training and retention of technical (i.e. mechanical, civil, etc.) skills and knowledge (i.e. retirement, poor capture of data, training programs). But should this just be just technical or whole of business skills?
- Merged businesses – creating one approach.
- Clear whole of life financial/strategic planning – moving past the short term NPV, understanding the benefits of effective preventive maintenance and driving improved budget building processes.
- Aligning to customer satisfaction.
- Moving from experience based decisions to data/risk based decisions.

Hobart is now spending the remainder of this year's first quarter gearing up to host this year's April AMPEAK, a not-to-be-missed world leading asset management conference which will feature a range of exhibits, case studies and technical content from all industries.







## WHAT'S HAPPENING IN THE NEWCASTLE CHAPTER?

If AMBoK asset management models are something that you wanted to learn the ins and outs of, then you should have been in Newcastle for their first gathering in 2018 in February. An enthusiastic group met to team up with Jamie Maslen

from Jacobs, who presented an informative representation of the AMBoK models. He walked the audience through the different models as well as providing some very useful real life examples of how applied.

If you think that's great, you should see what else Sean and the Newcastle chapter have in store for you. You can look

forward to more technical meets to explore:

- Smart City Infrastructure for the Future of Newcastle
- Corrosion and Stainless Steel
- Site visits to Orica Manufacturing and Supercars

# CHAPTER NEWS



## WHAT'S HAPPENING IN THE SYDNEY CHAPTER?

Steve and the rest of the Sydney Chapter have welcomed three fresh faces to the committee. Please join us in welcoming David Wilkinson, Samiha Najen and Lucio Favotto. It's great to have new faces, each with wonderful credentials, and we look forward to their contribution to the team as Sydney continues their strong growth in the chapter.

Sydney has not disappointed with frequent, interesting events. They have already wound their way through active discussions on using data to predict asset performance and Building Information Modelling technology for asset management. In the future, expect to hear about:

- New power network technologies
- Data mining in asset management
- Facility and Asset Management Alignment and Discriminators
- Reliability basics for AM Practitioners



## WHAT'S HAPPENING IN THE PERTH CHAPTER?

Anselm and the rest of the Perth Chapter have been having a great time so far this year. Already they've invited people to come and talk about hot topics such as value, improvement and innovation in asset management. And they teamed up with one

of the AMC's special interest groups – Women in Asset Management (WiAM) – to explore, education and workshop through all things finance that every asset management professional needs to know.

In March, the team again joined forces with the organisers, Diversified Communications

Australia, to organise a session at the Australasian Oil & Gas Exhibition Knowledge Forum on Superior Asset Performance. It was made up of a fantastic panel with great audience participation for this popular for this popular standing room only event.



**Woman in Asset Management (WiAM) is a passionate group of asset managers – both male and female – who are keen to show the benefits of asset management in providing diversity in the workplace.**

As WiAM National Chair, Felicia Tristante wants to see a gender balance in organisations that manage assets.

She is also keen to encourage STEM in the school system and breakdown any barriers that prevent girls taking up the STEM subjects.

Based in WA, Felicia Tristante manages to balance family and work as she travels all over the world with her career.

Felicia was more than pleased with the amount of positive feedback from the Lunch and Learn webinar series last year, she has brought it back for another run in 2018. Already we have heard from Dr Monique Beedles - with a whopping 130+ registrations all geared up to learn about sustainability and asset management.

Felicia is also keen to team up with each AMC chapter to bring

WiAM supported events around the country. The first was held early March in Perth, when Felicia Wong helped us understand how important understanding financials are to asset management professionals. As a first for the AMC, this presentation was broadcast live, with many around the country taking the opportunity to dial in from the comfort of their homes and offices to find out all about it.

If the WiAM movement is something that interests you, please put your hand forward and drop us a line to [info@amcouncil.com.au](mailto:info@amcouncil.com.au)



## YAMP News

**The Young Asset Management Practitioners Group (YAMP) was established with the aim of supporting the younger generation of asset management professionals within Australia.**

As YAMP National Chair, Reza Esmaeili, M.Sc. in Mechanical Engineering, is a highly qualified and experienced engineer with more than 8 years of practical expertise in Asset Management, Reliability, and Asset Performance management.

Reza has extensively worked in Australia and overseas in

a variety of roles. He has led several teams in driving positive changes within large engineering operations in Australia, South East Asia, North America and Middle East in a variety of industries including Mining, Oil & Gas, and Utilities.

He is also actively working in Building Information Modelling (BIM) and "Digital" Asset Management area and their mutually-supportive relationship in enabling operations to achieve an effective asset management. He is delighted to share his knowledge and experience with colleagues and clients.



Reza brings us a new webinar series during 2018 – the Learning Hour, which we look forward to broadcast at the end of March. He is also devoted to making sure there is a YAMP representative in each and every chapter of the AMC by the end of this year. If it's something that interests you, please put your hand forward and drop us a line to [info@amcouncil.com.au](mailto:info@amcouncil.com.au)

## TiAM News

**The Asset Management Council has entered into a Strategic Partnership with Transport for Victoria. One of TFV key initiatives was to start a special interest group - Transport in Asset Management.**

TfNSW and TFV and Broadsepctrum have established the group bringing governments, industry, researchers and the peak professional body in asset management together. AMCouncil Board member and representative from TfNSW, Toby

Horstead has taken the National Lead in the special interest group.

The Group will be hosting a panel discussion at AMPEAK considering topical issues in the Asset Management Transport

Special Interest Group was established with the aim of sharing examples of good practice and address topics that will benefit the broader transport asset management community. The TiAM Group will utilise members' skills and knowledge to improve the understanding,

capability and application of Asset Management knowledge and practice within the Transport industry. The TiAM Group is open to those AM Council members and partners who are interested in transport asset management best practice, innovations, practices, issues and solutions. To express your interest please sign up through the AMCouncil website [http://www.amcouncil.com.au/user\\_sig.aspx](http://www.amcouncil.com.au/user_sig.aspx)

## TRANSPORT FOR VICTORIA ON THE RIGHT TRACK WITH ASSET MANAGEMENT COUNCIL OF AUSTRALIA

**Transport for Victoria (TFV) is set to strengthen its relationship with the Asset Management Council of Australia (AMC). The partnership will improve the way in which Victoria's vast network of public transport assets are managed, from Melbourne's metro trains and Victoria's road network to bike paths and ports.**

Currently, TFV's agencies are expected to meet the requirements of the Asset Management Accountability Framework (AMAF).

TFV's new relationship with AMC will advance the use of the Framework beyond mere compliance in order to realise the full economic, environmental and social value of AMAF, improving sustainable asset management practices and boosting economic performance.

As an independent peak body, AMC will provide training for the third party reviewers who conduct the AMAF for TFV's various agencies. This training will enhance each reviewer's ability to identify gaps in analysis and find areas for improvement in agencies asset management systems.

AMC will also provide asset management training courses for staff across TFV's agencies and tailor the Asset Management Competency Framework to specifically suit their needs.

The relationship will allow TFV to tap into AMC's global bank of knowledge which features technical articles, webinars, and a range of certification programs that focus on promoting the best and most innovative new practices in asset management from thought leaders across a range of industries.

AMC will also offer a range of mentoring and coaching services to executives across TFV's agencies, further enabling them to gain full value from all TFV's assets and ensure they are managed sustainably for the benefit of all Victorians.

By connecting with AMC, TFV will be able to lead the way in asset management while ensuring consistency across its network of transport assets and consistency with other state governments.

"The Asset Management Council is excited to be strengthening its relationship with Transport for Victoria. We look forward to providing the highest quality training and resources to TFV to ensure the most efficient, sustainable and delivery of asset management within TFV" says National Chair, Dave Daines.

"The Asset Management Council is an independent, not-for-profit, peak body which provides professional development for asset management professionals on an international scale across a range of industries."

*Further enquiries can be directed to the Asset Management Council National Office info@amcouncil.com.au ph 03 9819 2515*



ASSET MANAGEMENT COUNCIL INTERNATIONAL

# 2018 AMPEAK

ASSET MANAGEMENT COUNCIL INTERNATIONAL CONFERENCE

empowering  
sustainable  
change

"The AMPEAK conference is the key  
meeting place for thought leaders in asset  
management across all industries"

**SUNDAY 15 APRIL -  
WEDNESDAY 18 APRIL 18**

Wrest Point, Hobart Australia

[www.ampeak.com.au](http://www.ampeak.com.au)

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# UP COMING EVENTS

EVENT	DATE	LOCATION
<b>March 2018</b>		
How to develop a Strategic Asset Management Plan seminar	1/03/2018	Perth
How to develop an Asset Management Plan seminar	2/03/2018	Perth
TC2521 Feedback: Melbourne Chapter Events	8/03/2018	Melbourne
Livestream Available) - Financials 101 for the Asset Management Professional	13/03/2018	Perth
BIM for Asset Management: Buildsmart: Sydney Chapter Events	14/03/2018	Sydney
Asset Management Fundamentals	16/03/2018	Adelaide
Sustainable Living : Newcastle Chapter Events	20/03/2018	Newcastle
Digital Engineering in Asset Management: Brisbane Chapter Events	21/03/2018	Brisbane
Asset Management Fundamentals	22/03/2018	Canberra
How to develop a Strategic Asset Management Plan seminar	22/03/2018	Canberra
Reliability Leadership enables Asset Management	28/03/2018	Webinar
<b>April 2018</b>		
Asset Management Fundamentals	6/04/2018	Sydney
Asset Management Fundamentals	9/04/2018	Melbourne
AMPEAK International Speaker: Melbourne Chapter	12/04/2018	Melbourne
Implementing an Information Management System: Melbourne Chapter Events	12/04/2018	Melbourne
AMPEAK 2018	15-18/04/2018	
Asset Management Fundamentals	19/04/2018	Hobart
Technical Event : Perth Chapter Events	19/04/2018	Perth
How to develop a Strategic Asset Management Plan seminar	20/04/2018	Hobart
<b>May 2018</b>		
Asset Management Fundamentals	3/05/2018	Perth
How to develop a Strategic Asset Management Plan seminar	4/05/2018	Perth
Asset Management Fundamentals	9/05/2018	Brisbane
Digitalisation in Asset Management: Melbourne Chapter Events	10/05/2018	Melbourne
How to develop a Strategic Asset Management Plan seminar	10/05/2018	Brisbane
How to develop an Asset Management Plan seminar	11/05/2018	Brisbane
Site Visit: Orica Manufacturing: Newcastle Chapter Events	15/05/2018	Newcastle
Asset Management in Power Distribution Operations: Brisbane Chapter Events	16/05/2018	Brisbane



EVENT	DATE	LOCATION
<b>May 2018</b>		
New Power Network Technologies :: Sydney Chapter Events	17/05/2018	Sydney
Asset Management Fundamentals	21/05/2018	Melbourne
How to develop a Strategic Asset Management Plan seminar	22/05/2018	Melbourne
How to develop an Asset Management Plan seminar	23/05/2018	Melbourne
Asset Management Fundamentals	23/05/2018	Sydney
How to develop a Strategic Asset Management Plan seminar	24/05/2018	Sydney
Technical Event :: Perth Chapter Events	24/05/2018	Perth
How to develop an Asset Management Plan seminar	25/05/2018	Sydney
Asset Management Fundamentals	31/05/2018	Adelaide
<b>June 2018</b>		
How to develop a Strategic Asset Management Plan seminar	1/06/2018	Adelaide
Asset Management Fundamentals	7/06/2018	Auckland
How to develop a Strategic Asset Management Plan seminar	8/06/2018	Auckland
Asset Management Accountability Framework: Melbourne Chapter Events	14/06/2018	Melbourne
Asset Management Fundamentals	15/06/2018	Canberra
Mardi Keyes: Webinar	19/06/2018	Webinar
Data Mining in Asset Management: CSU: Sydney Chapter Events	20/06/2018	Sydney
Technical Event : Perth Chapter Events	21/06/2018	Perth
Asset Management Fundamentals	22/06/2018	Melbourne
Asset Management Fundamentals	29/06/2018	Sydney



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# Membership Application



ASSET MANAGEMENT COUNCIL

## ASSET MANAGEMENT COUNCIL LTD

A Technical Society of Engineers Australia

ABN: 15 141 532 747 [www.amcouncil.com.au](http://www.amcouncil.com.au)

Phone: +613 9819 2515 Email: [accounts@amcouncil.com.au](mailto:accounts@amcouncil.com.au)

Thank you for joining the Asset Management Council. Please complete all sections. Phone or email with any queries.

### PERSONAL DETAILS (Please print in BLOCK CAPITALS)

Title (Please circle) Dr Mr Mrs Ms Miss Other (Please specify) Sex (Please circle) F M

Family Name Given Names (in full)

Date of Birth Engineers Australia Membership No

### CONTACT DETAILS (Please print in BLOCK CAPITALS)

Preferred Address: ☐ Private Address or ☐ Business Address

Position

Organisation

Postal Address

City State

Country Postcode

Phone Fax

Mobile

E-mail

### AREAS OF INTEREST (Please tick)

#### Technical Topics

- ☐ Reliability
- ☐ Availability
- ☐ Maintainability
- ☐ Performance
- ☐ Spares Planning
- ☐ Maintenance Planning and Scheduling
- ☐ Maintenance Plan development and implementation
- ☐ Maintenance Policy/Strategy development
- ☐ Logistics
- ☐ Shutdown planning and the maintenance interface
- ☐ Asset Management
- ☐ Other:

#### Issues

- ☐ Skills development
- ☐ Training
- ☐ Other:

#### Industries

- ☐ Facility Management
- ☐ Consulting
- ☐ Power
- ☐ Transport
- ☐ Defence
- ☐ Oil and Gas
- ☐ Mining and Industry
- ☐ Water and Utilities
- ☐ Infrastructure
- ☐ Other:

Return completed Membership Application with payment to:  
Asset Management Council  
PO Box 2004, Oakleigh Vic 3166

## GROUP AFFILIATION

☐ Young Asset Management Practitioners (18-35 year olds)

## CHAPTER AFFILIATION (Please tick one)

<input type="checkbox"/> Newcastle	<input type="checkbox"/> Canberra	<input type="checkbox"/> Sydney	<input type="checkbox"/> Illawarra	<input type="checkbox"/> Mackay
<input type="checkbox"/> Melbourne	<input type="checkbox"/> Adelaide	<input type="checkbox"/> Brisbane	<input type="checkbox"/> Hobart	
<input type="checkbox"/> Darwin	<input type="checkbox"/> Overseas	<input type="checkbox"/> Gippsland	<input type="checkbox"/> Perth	

## MEMBERSHIP FEES Effective Jan 2015 (Please tick one membership type only)

Individual Annual Fee (including GST)

☐ Member \$154.00

☐ Student \$33.00

Corporate Annual Fee (including GST)

☐ Platinum \$9,570.00

☐ Silver \$1,804.00

☐ Gold \$3,608.00

☐ Bronze \$957.00

GST (10%) does not apply to overseas memberships.

## CORPORATE MEMBER NOMINEES

Platinum – 30 nominees, Gold – 10 nominees, Silver – 10 nominees, Bronze – 5 nominees

Name	Email	Date of Birth (Mandatory)	AM Council Chapter
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Contact Asset Management Council to provide more corporate nominee details.

## PAYMENT

**Method of Payment** (please tick one and enclose payment)

☐ Cash

☐ Money Order or Cheque drawn in AUD from an Australian bank payable to **Asset Management Council Ltd**

☐ International Money Order

☐ Credit Card  
(Australian or New Zealand Bankcard only acceptable)

**Credit Card Details** Please charge my card (tick one card type)

☐ Visa

☐ Bankcard

☐ Mastercard

☐ Diners

☐ American Express

Card no

Expiry

Amount \$

Name on card

Signature

Date



# New Members

Origin Energy	
Nihar Associates	
Simon	Nailer
Public Transport Victoria	
Oscar Julian	Plata Olarte
Ken	Bohan
Dion	Bailey
Sandra	Thaow
Michael	Ridger
Grant	Burton
Michael	Clulow
Sam	Ballantine
Ross	Haywood
Dean	Cambridge
Ted	Richardson
Aaron	Devitt
Matthew	Copeland
Richard	Halse
Rebecca	Carpenter
Merrilyn	James
Andrew	Scott
Thomas	Bosley
Johannes	Boyke
Myriam	Bourdon
Matthew	Kelly
Tristan	Croft
Abraham	
David	Nichols
Alan	Jones
Stuart	Nell
Dean	Lavers
Hayley	Bringdal
Tim	Royle
ISW Solutions Pty Ltd	
Kevin	Hiew
Phil	Collins
Darren	Curley
Ian	Warner
Craig	Kokay
Don	St Pierre
Wayne	Tomlinson
Michael	Kasteel
John	Baragwaneth

Syed	Hussain
John	Bilson
Bo	Mabry
Mark	Anderson
Ali	Qureshi
Tim	Kenneally
Fernando	Rios
Frans	Wilhelm
John	Stewart
Matthew	Hayes
Adrian	Shalley
Frans	Wilhelm
Theresa	Bullen
Veronica	Wieckowski
Tanya	Lorsirinant
Catherine	Stokes
Jason	Kong
Sawsan	Raffo
Ravi	Malik
Mathew	John
Jarrinson	Parra
Mark	Liddy
Kieran	Shirey
LOGIT Australia Pty Ltd	
Chris	Knight
Ben	Clark
Malcolm	Fleming
Lambros	Koukourikis
Daniel	Saghafi
Natalia	Florez
Samantha	Rose
Graham	Sykes
Dominic	Nadvillaveetil
Aliyyah	Chizari
Joseph	Baini
Aaron	Mccaughan
James	Cose
Adrian	Morrison
GAURANG	THANKI
Catherine	Baird
Neil	Moriarty
Alexandra	Robertson

Maria	Rashidi
Nick	Thomas
Jason	Mignone
Paul	Baker
Laurie	Smith
Andrew	Laing
Muhammad	Hussain
Anthony	Singleton
Tammy	Whipple
Aruna	Attanayaka
Caitlin	Summerton
Felicia	Wong
Jon	Alsop
Joel	Otley
Steven	Rigby
Piotr	Stozek
Nicole	Opie
Deanne	Leaver
Adam	Saleh
Paul	Reynolds
Grujica	Ivanovich
Ron	McGhie
Craig	Matthews
James	Wong
Sam	Floriani
Peter	Livingston
Martin	Sedgwick
Nicola	Belcher
Cassie	Khaw
Marc	Furedi
Nahaz	Chowdhury
Kevin	Oon
Peter	Edwards

# Partners, Corporate Members & Contacts

Partnering  
Organisations



Broadspectrum  
www.broadspectrum.com



IFM Investors  
www.ifminvestors.com



SAP Australia  
www.sap.com

## PLATINUM

Asset Standards Authority,  
Transport for New South Wales  
Ausgrid  
BAE Systems  
Broadspectrum  
Downer Engineering,  
Construction & Maintenance  
Industry Funds Management (IFM)  
SAP  
Ventia Pty Limited

## GOLD

Airservices Australia  
Austal Ships Pty Ltd  
Bombardier  
Capability Partners  
Department of Defence CASG  
Energy Queensland Limited  
GHD Pty Ltd  
ISW Solutions Pty Ltd  
Jacobs  
K2 Technology Pty Ltd  
Lendlease Services Pty Ltd  
Naval Ship Management (Australia)  
Power and Water Corporation  
Stanwell Corporation Limited  
Sydney Water Corporation  
Thales Australia Limited  
TransGrid  
Transurban Ltd  
Utopia Global Inc.  
Vesta Partners  
Warship Asset Management Agreement  
Western Power

## SILVER

AActewAGL Distribution  
AECOM  
AGL  
AMCL  
ASC Pty Ltd  
Australian Rail Track Corporation Ltd (ARTC)  
Broadcast Australia  
Capability Acquisition and Sustainment  
Group - Land Engineering Agency  
Cardno (QLD) Pty Ltd  
City of Perth  
I @ CONSULTING (PTY) LTD  
Jemena Asset Management  
Kellogg Brown & Root Pty Ltd (KBR)  
Logsys Power Services  
Lycopodium Infrastructure Pty Ltd  
Metro Trains Melbourne (MTM)  
Nova Systems

NSW Office of Environment and Heritage,  
National Parks and Wildlife Service  
Origin Energy  
Programmed Facility Management  
Public Transport Authority  
Refining NZ  
SNC-Lavalin Rail and Transit  
Sodexo Australia Pty  
Sydney Trains  
VicRoads  
VicTrack  
WSP Parsons Brinckerhoff

## BRONZE

ABB Enterprise Software  
Activa Pty Limited  
ANSTO  
ARMS Reliability Engineers  
Assetic Pty Ltd  
Assetivity Pty Ltd  
Aurecon Australia Pty Ltd  
Australia Pacific Airports (Melbourne)  
Babcock Pty Ltd  
Boeing Defence Australia - Wedgetail In  
Service Support  
Bureau Veritas  
Campeyn Group  
Certus Solutions  
Country Fire Authority (CFA)  
Covaris Pty Ltd  
Cushman & Wakefield  
Delta Facilities Management Pty Ltd  
Department of Environment, land, Water and  
Planning  
Electrix Pty Ltd  
Energex Limited  
Energy Queensland  
Frazer-Nash Consultancy Limited  
Fremantle Ports  
GDF Suez Australia Energy  
Gladstone Area Water Board  
Goulburn Valley Water  
Hexagon PPM  
Hunter Water Corporation  
Icon Water Limited  
Indec Consulting  
Innovative Thinking IT  
Institute of Quality Asset Management  
KPMG

LogiCamms  
LOGiT Australia Pty Ltd  
Macutex  
Maintenance & Project Engineering Pty Ltd  
Melbourne Water  
Meridian Energy  
Nexus Global Australia  
Nihar Associates  
North East Water  
NRG Gladstone Operating Services  
NSW Ports  
Opus International Consultants  
Pacific Hydro  
Paradoxian Pty Ltd  
Penrith City Council  
Pindan Asset Management  
Port of Newcastle  
Public Transport Victoria  
QENOS  
Redeye Apps  
SEQWATER  
Shoalhaven Water  
St George Community Housing  
State Automation  
Structural Integrity Engineering Pty Ltd  
Sutherland Shire Council  
Tasrail  
TasWater  
Terotek (NZ) Limited  
The Asset Management College  
Transport For Victoria  
United Energy  
Water Corporation  
WaterNSW  
Wood Plc (Australia)

# Testimonials

**Mark Mackenzie:** *"It's the peak body, not only in Australia, but for asset management around the world. We've got representation on a number of international forums and organisations. Australia, surprisingly, is leading the world in asset management. A lot of countries are adopting what we're doing and so being part of that is, I guess, being part of best practice with asset management in Australia."*

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**Greg Williams:** *"I think it's not associated with any particular industry. We're not water, we're not electricity, we're not gas. We're about sharing knowledge, we're about providing forums for people to express points of view, we're about connecting together. Those are the three key reasons that I'm involved and I think those reasons are probably the same that most people get involved in the AMC."*

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**Melinda Hodkiewicz:** *"They have done a tremendous amount to promote the professionalism of asset management and I really applaud the work that they have done to assist asset managers - not only to professionally develop, but to also provide events like the AMPEAK that bring a whole bunch of people together who wouldn't otherwise have any way to connect."*

---

**Dave Daines:** *"I think now asset management is really starting to draw people in the ability to use the standard to save money and improve performance, so that's really the key now to what the standard was developed for. I think now, when people are talking about it, they come together and there's that vibrant feel to get some activity generated from that."*

---

**Tom Birdseye:** *"It's really given me a leg-up in terms of my ability to be able to network and my ability to be able to communicate with the other professionals in the asset management industry. As a young asset manager, I guess you would call me, I would never really have exposure to any of the types of people or the contacts that I have been able to be exposed to as the Adelaide Chapter Chair."*

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**Martin Kerr:** *"We're always looking for a new set of eyes, new ideas and of course experiences, and I think it's the richness of those things that actually contribute and make the AmBOK team as powerful as they are. All the models that we actually create, we actually use to create other models, so it actually demonstrates that we're actually testing ourselves for everything we do."*

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**Peter Kohler:** *"Not just learn from the approach the AMCouncil might take to doing things in terms of its advice as to how you might manage your assets better, but also to be able to talk to people. There's a lot of huge amount of experience - good and bad - in the room and you should get a hold of that, listen to that, and take what you think would be useful and relevant out of that."*

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ASSET MANAGEMENT COUNCIL

THE  
**ASSET**  
JOURNAL

Asset Management Council

PO Box 2004  
Oakleigh Vic 3166

Tel 03 9819 2515

[www.amcouncil.com.au](http://www.amcouncil.com.au)