

Asset Management Maturity

A Position Statement

First Edition

English Version



GFMAM

Global Forum on Maintenance
& Asset Management

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Forward

With the publication of the ISO 55000 series of standards, the Global Forum on Maintenance & Asset Management (GFMAM) recognized that the accelerating interest in Asset Management would benefit from more guidance on Asset Management maturity. This position statement defines the key principles of Asset Management maturity.

What is the value?

Alignment with ISO 55001 for many organisations will not realize the full value to stakeholders. There is a substantial and growing body of evidence that there are significant benefits to organisations that develop their maturity in Asset Management beyond compliance. The GFMAM has a separate project that is developing the evidence around the value delivered by organisations to their stakeholders through increased Asset Management maturity.

Why have we done this?

Different professional bodies in Asset Management, and individual organisations working in Asset Management, have been developing their thinking on Asset Management maturity for many years. This work has taken different approaches to maturity and the GFMAM recognized the opportunity to build on this work and develop a common set of principles on Asset Management maturity.

Who is the target audience?

This document is intended for organizations who wish to develop guidance around how to assess Asset Management maturity and will be most beneficial to people with some experience in Asset Management.

This document is not a tool for assessing Asset Management – the work to date has concluded that assessing Asset Management maturity is intricate – in particular at the higher levels of maturity. It is expected that organisations will develop their own detailed guidance on Asset Management maturity that is consistent with this position statement, aligns with their bodies of knowledge and meet the specific needs of their stakeholders.

Ongoing work within GFMAM

GFMAM member societies are developing guidance on Asset Management maturity and the lessons learned from this work will be fed back to continuously improve this document.

Feedback

All feedback on this document is welcome – whether from members of the GFMAM or anyone else that is developing guidance on Asset Management maturity. Please email maturity@gfmam.org.

The Global Forum on Maintenance and Asset Management

The Global Forum on Maintenance and Asset Management (GFMAM) has been established with the aim of sharing collaboratively advancements, knowledge and standards in Maintenance and Asset Management.

The members of GFMAM (at the time of issue of this document) are:

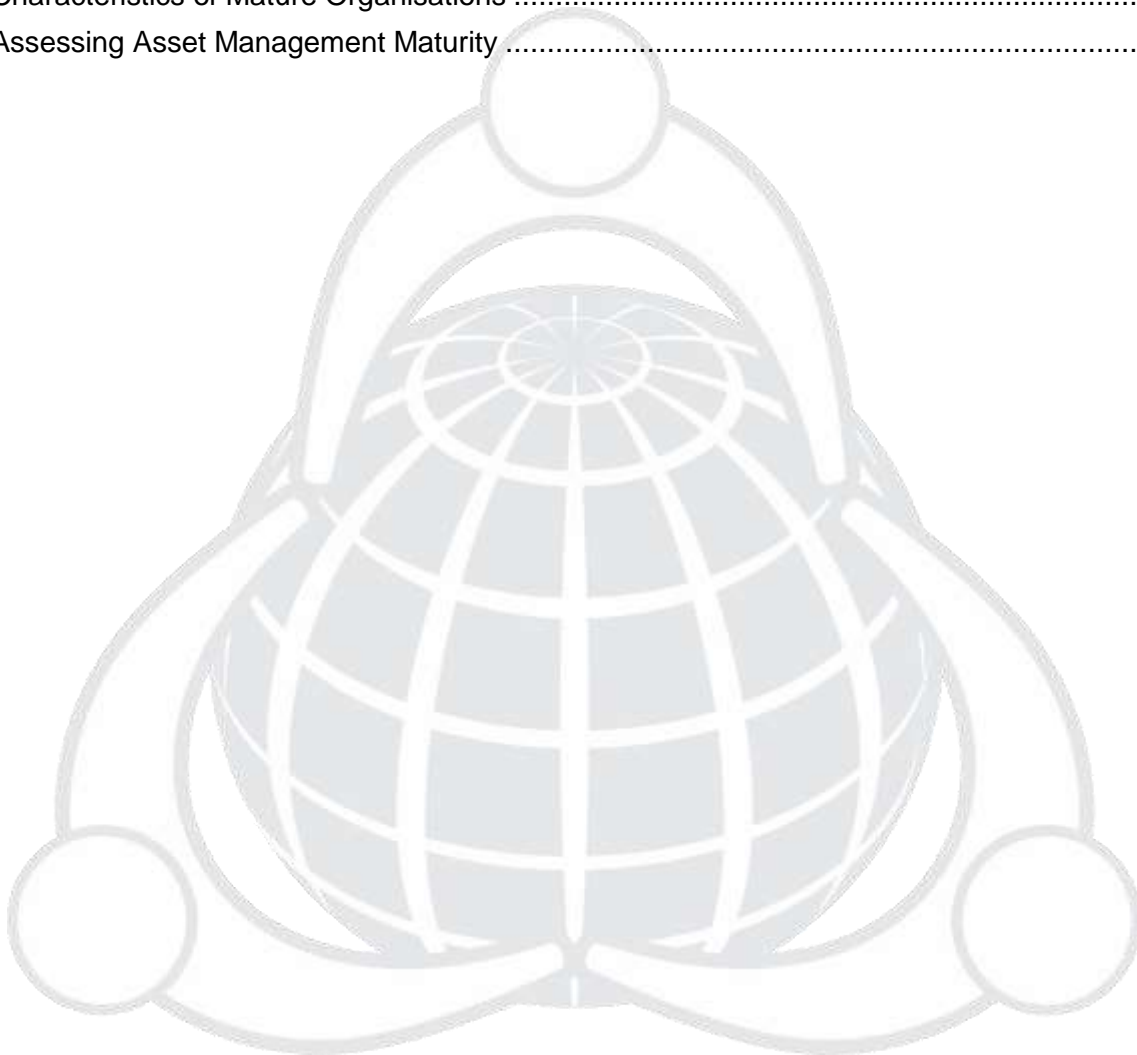
Asset Management Council (AMCouncil), Australia;
Associação Brasileira de Manutenção e Gestão de Ativos (ABRAMAN), Brazil;
European Federation of National Maintenance Societies (EFNMS), Europe;
French Institute of Asset Management and Infrastructures (IFRAMI), France;
Gulf Society of Maintenance Professionals (GSMP), Arabian Gulf Region;
Iberoamerican Federation on Maintenance (FIM), South America;
Institute of Asset Management (IAM), UK
Japan Institute of Plant Maintenance (JIPM), Japan
Plant Engineering and Maintenance Association of Canada (PEMAC), Canada
The Society for Maintenance and Reliability Professionals (SMRP), USA.
The Southern African Asset Management Association (SAAMA), South Africa

The enduring objectives of the GFMAM are:

- 1) To bring together, promote and strengthen the maintenance and asset management community worldwide
- 2) To support the establishment and development of associations or institutions whose aims are maintenance and asset management focused
- 3) To facilitate the exchange and alignment of maintenance and asset management knowledge and practices
- 4) To raise the credibility of member organizations by raising the profile of the Global Forum

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1 Purpose and Scope

The purpose of this document is to provide a position statement on Asset Management maturity from the Global Forum on Maintenance and Asset Management (GFMAM), to support organisations in their implementation of Asset Management. This is intended to be a high-level statement only, that sets out the principles and characteristics associated with Asset Management maturity and does not describe the detail.

It is expected that each GFMAM member society will develop their own detailed guidance on Asset Management maturity that is consistent with this position statement, aligns with their body of knowledge and meets the specific needs of their members. Consideration will be given to the inclusion of a common maturity scale with appropriate bands and definitions for measuring Asset Management maturity.

2 Background

With the publication of the ISO 55000 series of standards, the GFMAM recognized that the accelerating interest in asset management would benefit from more guidance and consistency in defining different levels of Asset Management maturity.

This GFMAM position statement on Asset Management maturity defines the key principles of Asset Management maturity. This position statement is not limited to the stages encountered on the way to meeting ISO 55001 requirements – it looks beyond compliance with ISO 55001 and considers the characteristics that organisations would exhibit at higher levels of maturity.

The GFMAM recognizes that the extent to which organisations want to develop their Asset Management capabilities ¹ will vary and that this will be driven by the associated business benefits.

3 Definition of Asset Management Maturity

Asset Management maturity is the extent to which the capabilities, performance and ongoing assurance of an organisation are fit for purpose to meet the current and future needs of its stakeholders, including the ability of an organisation to foresee and respond to its operating context.

Organisations that demonstrate Asset Management maturity should be able to foresee and respond to both the changing business environment and changing stakeholder needs in a manner that retains alignment of the various activities within the organisation.

¹ Asset management capability is defined as the extent to which an organisation has developed its people, processes, technology, leadership and culture in Asset Management compared to recognised best practices in Asset Management and the extent to which these are integrated to deliver the outcomes of an organisation

4 Principles of Asset Management Maturity

The following principles apply to Asset Management maturity:

- a) Consideration must be given to the capabilities of an organisation across the Asset Management Landscape, including the integration of these capabilities to achieve the organisation's objectives;
- b) Consideration must be given to the performance and value that an organisation is delivering to its stakeholders, including the achievement of the organisation's objectives;
- c) Consideration must be given to the extent to which the Asset Management System is embedded and integrated with other business systems and processes;
- d) Consideration must be given to these perspectives: Assets, Processes (Structured), Governance (Assurance) and Culture (Structuring) ²;
- e) Asset Management maturity is not the same as complexity, for example, a simple solution may be a mature solution for certain organisations or operating contexts;
- f) Asset Management maturity can be measured on a scale with defined bands and descriptions of the characteristics that would be expected and demonstrable at each band;
- g) Moving through the lower maturity bands can be characterised as becoming more process-aligned, disciplined and integrated. The degree to which this is achieved can therefore be assessed in terms of conformance with management system requirements such as ISO 55001: moving through the high maturity bands will be assessed using more holistic, proportionate and 'behavioural' characteristics;
- h) Whilst the requirements for ISO 55001, which defines 'good practices' in a management system, may remain relatively stable, best practices in Asset Management will continually evolve. Definitions and maturity bands will need to reflect this;
- i) Best practices may be context, industry, culture and stakeholder specific; and
- j) Past maturity assessments may not be a reflection of current maturity due to this evolution of best practices. Assessments are therefore be less dependable as time passes and assessment results should be time-limited.

5 Benefits

Consideration and assessment of Asset Management maturity provides the following benefits:

- a) A clear, staged path for improving Asset Management;
- b) More objective demonstration of existing capabilities, competencies and progress;
- c) Helps in setting realistic targets and improvement objectives;
- d) Provides consistent language with which to discuss strengths and weaknesses in asset management; and
- e) Enables benchmarking, even between organisations managing different assets in different operating environments.

² Source: ISO 15504

Increasing Asset management maturity may deliver the following benefits:

- 1) Aligning the individual activities and behaviours that achieve the organisation's objectives;
- 2) Improving both financial and non-financial results;
- 3) Providing clarity about the goals and future direction of the organisation;
- 4) Raising credibility and confidence, both within the organisation and in the eyes of external stakeholders;
- 5) A more positive and co-operative work environment, with higher productivity;
- 6) Optimising lifecycle costs;
- 7) Aligning risk with stakeholder risk appetite;
- 8) Creating more consistency between results predicted and those actually achieved;
- 9) Recognising, and increasing exploitation of, existing strengths in the organisation;
- 10) Increased ability to adapt to changes in external conditions;
- 11) A better environment for innovation and creativity;
- 12) Greater confidence in delivery of future performance and value; and
- 13) The right conditions for establishing and sustaining a culture for success.

6 Characteristics of Mature Organisations

Organisations at the highest level of Asset Management maturity would typically exhibit the following general characteristics:

- a) They can demonstrate that their capabilities, performance and ongoing assurance across the Asset Management landscape are fit for purpose for their operating context;
- b) They are delivering outcomes that meet the current and future needs of their stakeholders;
- c) They continually improve the Asset Management System and the elements of Asset Management outside of the Management System;
- d) They are responsive to changing demands and environments;
- e) Leadership and aligned commitment is evident at all levels in the organisation;
- f) Activities across all disciplines in an organisation are integrated and decisions are demonstrably aligned to stakeholders' requirements;
- g) More importance is attached to forward looking Key Performance Indicators, focused on stakeholders' objectives, although backward looking KPIs are complementary and are also used to track performance;
- h) Costs, risk and performance are understood at all levels in the organisation;
- i) Everyone in the organisation is striving to deliver greater value to stakeholders and there is a culture of 'doing what is best for the organisation as a whole' where;
- j) Organisational interfaces are seamless;
- k) They have appropriate proportionality in precision and quantification of risks, costs and performance, in data collection, analysis and decision-making methods;

- l) They are able to demonstrate the best value solution and to quantify the impact of suboptimal options or timing;
- m) There is evidence of proactive research in the identification of improvement opportunities, including adaptations and refinements from other industry sectors; and
- n) They are aware of their position compared to competitors or peer groups, and can demonstrate, via benchmarking or independent recognition, that they outperform such other organisations.

7 Assessing Asset Management Maturity

Assessing Asset Management maturity is a complex issue, vulnerable to subjectivity and problems of consistency in different environments.

In the lower bands (e.g. up to conformance with ISO 55001) it is likely to be a relatively mechanistic process which can use pre-defined questions and answers. However, assessing Asset Management maturity in the higher levels of maturity is likely to be more context-dependent and will also rely much more on the experience and knowledge of the assessor to recognise the appropriateness and level of sophistication of the observed attributes. Assessments at this higher level are likely to place more emphasis on the leadership, culture and behaviours of the organisation whilst not losing focus on the adequacy and coordination of processes and systems in use.

There has been significant work done on maturity in a range of other domains. Maturity assessment in asset management should leverage any existing maturity assessment frameworks relevant to the subject being assessed. Appendix A contains some examples of other maturity assessment approaches and Appendix B contains some examples of maturity scales.

It is proposed that the individual GFMAM member societies consider how Asset Management maturity can best be assessed and any common principles and approaches can then be documented in a future version of this position statement. Consideration will also be given to the inclusion of a common maturity scale with appropriate bands and definitions for measuring Asset Management maturity.

Appendix A – References

The following are references to work that has been undertaken by members of GFMAM on Asset Management maturity:

- IAM green paper on AM maturity - <https://theiam.org/IAM-Maturity-Paper>
- Living Asset Management - <http://www.amcouncil.com.au/knowledge/publications/living-asset-management.html>

The following are some more general references to different approaches to defining and assessing maturity of a number different areas:

- ISO 15504: Information Technology – Process Assessment – <http://www.iso.org/>
- Baldrige Awards - <http://www.nist.gov/baldrige/>
- EFQM - <http://www.efqm.org/>
- Japan Quality Award Council - <https://www.jqac.com/en/index.asp>
- CMMI - <http://cmmiinstitute.com/>
- People Maturity Capability Model (P-CMM) - <http://cmmiinstitute.com/resources/people-capability-maturity-model-p-cmm>
- Safety Maturity approaches - <http://www.keilcentre.co.uk/products-services/safe-people/safety-culture/safety-culture-maturity-model/>

Appendix B - Example Maturity Scales

Although it is expected that each GFMAM member society will develop their own detailed guidance on Asset Management maturity, consideration will be given to the inclusion of a common maturity scale with appropriate bands and definitions for measuring Asset Management maturity.

A number of examples of existing maturity scales are provided for information only as follows.

The **Institute of Asset Management** Asset Management Maturity Scale:

0. **Innocent** - The organisation has not recognised the need for this requirement and/or there is no evidence of commitment to put it in place
1. **Aware** - The organisation has identified the need for this requirement, and there is evidence of intent to progress it.
2. **Developing** - The organisation has identified the means of systematically and consistently achieving the requirements, and can demonstrate that these are being progressed with credible and resourced plans in place.
3. **Competent** - The organisation can demonstrate that it systematically and consistently achieves relevant requirements set out in ISO 55001.
4. **Optimising** - The organisation can demonstrate that it is systematically and consistently optimising its Asset Management practice, in line with the organisation's objectives and operating context.
5. **Excellent** - The organisation can demonstrate that it employs the leading practices, and achieves maximum value from the management of its assets, in line with the organisation's objectives and operating context.

The '**Capability Maturity Model**' (CMM – a software development maturity model):

1. **Initial** (chaotic, ad hoc, individual heroics) - the starting point for use of a new or undocumented repeat process.
2. **Repeatable** - the process is at least documented sufficiently such that repeating the same steps may be attempted.
3. **Defined** - the process is defined/confirmed as a standard business process, and decomposed to levels 0, 1 and 2 (the last being Work Instructions).
4. **Managed** - the process is quantitatively managed in accordance with agreed-upon metrics.
5. **Optimizing** - process management includes deliberate process optimization / improvement.

The '**Portfolio, Programme and Project Management Maturity Model**' (P3M3):

1. Level 1 – **awareness** of process
2. Level 2 – **repeatable** process
3. Level 3 – **defined** process
4. Level 4 – **managed** process
5. Level 5 – **optimized** process

The 'People Capability Maturity Model':

1. The **Initial** Level
2. The **Managed** Level
3. The **Defined** Level
4. The **Predictable** Level
5. The **Optimizing** Level

The 'Testing Maturity Model':

1. **Initial** – At this level an organisation is using ad-hoc methods for testing, so results are not repeatable and there is no quality standard.
2. **Definition** – At this level testing is defined a process, so there might be test strategies, test plans, test cases, based on requirements. Testing does not start until products are completed, so the aim of testing is to compare products against requirements.
3. **Integration** – At this level testing is integrated into a software life cycle, e.g. the V-model. The need for testing is based on risk management, and the testing is carried out with some independence from the development area.
4. **Management and measurement** – At this level testing activities take place at all stages of the life cycle, including reviews of requirements and designs. Quality criteria are agreed for all products of an organisation (internal and external).
5. **Optimisation** – At this level the testing process itself is tested and improved at each iteration. This is typically achieved with tool support, and also introduces aims such as defect prevention through the life cycle, rather than defect detection (zero defects).

The Japan Quality Award Council

1. AAA – Is on an innovative track, continuing to generate excellence result
2. AA – Generating significant value through organisation-wide learning activities
3. A – Takes action based on strategic thinking concerning desired value
4. B – Has started shifting from improvements based on the past framework to innovation
5. C – Carries out improvement actions within the past framework
6. D – Does not appear to be making any effort to achieve improvements