Foreword

The Global Forum on Maintenance & Asset Management (GFMAM) has recognized that, with accelerating interest in Asset Management and adoption of the ISO55000 standards, some organizations (and people) would value more guidance on Asset Management Maturity.

This Specification outlines the appropriate knowledge, experience and capabilities required by a person in order to approach the subtle and complex task of assessing Asset Management Maturity in an organization.

It should be read in conjunction with the other two documents on Asset Management Maturity published at the same time: the Position Statement on Asset Management Maturity and the Guidelines for Assessing Asset Management Maturity. The relationship between these documents is shown here.

What is the value of maturity in asset management?

A level of maturity represented by conformance to the requirements of ISO 55001 may not deliver all the value desired by the organization’s stakeholders. There is also a substantial and growing body of evidence that there are significant benefits to organizations that develop their maturity in Asset Management beyond conformance with ISO 55001.

The GFMAM recognizes that the extent to which organizations will wish to develop their Asset Management capabilities will vary and that this will be driven by the potential for business benefits.
Why is GFMAM guidance on maturity needed?

Different professional bodies in Asset Management, and individual organizations working in Asset Management, have been developing their thinking on Asset Management Maturity for many years. These initiatives have taken different approaches and the GFMAM recognized the opportunity to build on this work by developing a consensus on Asset Management Maturity.

By aligning our general understanding of the subject, we can better help others understand what to look for – and increase the value that Asset Management can provide. So the lessons learned from their work have been fed back into this Competency Specification.

Who is the target audience?

This document is focused on the Asset Management Maturity Assessor, and is intended for organizations who wish to develop guidance on Asset Management Maturity and how to assess it. The document will be most beneficial to people with experience in Asset Management.

Asset Management Maturity is subtle and complex, particularly at higher levels of maturity. 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 and stakeholders.

Feedback

All feedback on this document is welcome – especially from anyone else that is developing guidance on Asset Management Maturity. Please email info@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 (AM Council), Australia;
- Brazilian Asset Management and Maintenance Association (ABRAMAN), Brazil;
- Belgian Maintenance Association (BEMAS), Belgium;
- European Federation of National Maintenance Societies (EFNMS), Europe;
- Gulf Society for Maintenance and Reliability (GSMR), Arabian Gulf Region;
- Institut Français d'Asset Management Industriel et Infrastructures (IFRAMI), France;
- Institute of Asset Management (IAM), UK;
- Japan Institute of Plant Maintenance (JIPM), Japan;
- Japan Association of Asset Management (JAAM), Japan;
- PEMAC Asset Management 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.

To raise the credibility of member organizations by raising the profile of the Global Forum.
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1 References

The following documents, in whole or in part, are listed as relevant References. They may be considered to be ‘normative’ references in that the reader needs to be familiar with their content in order to understand Asset Management Maturity. Unless a date is specified the latest version should be used.

A. ISO 55000, Asset management — Overview, principles and terminology
B. ISO 55001, Asset management — Management systems – Requirements
C. ISO 55002, Asset management — Management systems – Guidelines for the application of ISO 55001
H. ISO/IEC 17000 Conformity assessment — Vocabulary and general principles
I. ISO/IEC 17021-1 - Conformity assessment - Requirements for bodies providing audit and certification of management systems
J. ISO/IEC TS 17021-5 - Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 5: Competence requirements for auditing and certification of asset management systems
K. ISO 31000 Risk management — Guidelines
L. Bloom’s Taxonomy1 – A Revision of Bloom’s Taxonomy by David R. Krathwohl, 2002 https://www.academia.edu/33808588/Theory_Into_Practice_A_Revision_of_Blooms_Taxonomy_An_Overview
M. ISO 19011 Guidelines for auditing management systems
N. ISO/IEC 17024:2012 Conformity assessment — General requirements for bodies operating certification of persons

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1 There is no single authoritative source so we have provided one we found useful
2 Purpose & Scope

The purpose of this document is to provide a Specification for Maturity Assessors (a Competency Statement) to support the GFMAM Position Statement on Asset Management.

2.1 Terms & Definitions

‘AMMA’ means Asset Management Maturity Assessor
‘AMS’ means Asset Management System
‘Assessment’ means the act of judging or deciding the amount, value, quality, or importance of something, or the judgment or decision that is made
‘Asset Management Capability’ means the extent to which an organization has developed its people, processes, technology, leadership and culture in Asset Management and the extent to which these are integrated to deliver its asset management objectives
‘Asset Management Maturity’ means the extent to which the capabilities, performance and ongoing assurance of an organization are fit for purpose to meet the current and future needs of its stakeholders, including the ability of an organization to foresee and respond to changes in its operating context
Audit’ means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled (ISO 9001)

Note: An audit can be an internal audit (first party) or an external audit (second party or third party), and it can be a combined or integrated audit (combining two or more disciplines).

2.2 Purpose

This document does not specify how an Asset Management Maturity Assessor plans their work, organizes their visits or produces their recommendations. Please see Reference F for guidance.

However, two comments are offered:

1. It is expected that the client organization desires to understand not only what is required to have a relevant management system but also to be able to deliver sustained value. This requires a maturity assessment that goes beyond just having systems and processes. See the Position Statement for more detail (Ref E).

2. The AMMA will be considering for how long the organization has been consistently delivering desired outcomes, demonstrating high performance and improving its Asset Management System and practices, especially behaviours; and if those achievements were because of an effective AMS or otherwise (e.g. luck).

The AMMA’s report and findings should justify what has been done to reach the conclusions and recommendations made - See Guidelines for Assessing Asset Management Maturity (Ref F).
2.3 Process for Selecting an AMMA

Because the matters being assessed are both subtle and complex, the competences necessary to observe, interview, assess and synthesize are important for an AMMA. Organizations and assessors that wish to select AMMAs need a robust and transparent process for recognizing those qualities in a candidate.

This document does not specify the interview and selection process but, in addition to the listed Competences in Section 3, AMMAs are expected to:

1. Be able to take a holistic and strategic view of the client organization but also investigate relevant details to formulate their findings and report.
2. Be able to propose appropriate improvements and defend them to the client based on agreed likely scenarios.
3. To ensure top management understand clearly the basis for their conclusions, report and recommendations.
4. To make proper arrangements for recording the findings, such that another Maturity Assessor could review and endorse or challenge the findings.
3 Assessor competences

This Section is guidance. At this level the Assessment process is, necessarily, based on experience and judgment. Understanding the causes of some aspects of high-performing organizations will need subtlety and tact to observe and assimilate the evidence.

AMMAs need to approach Maturity Assessments with the understanding of what is driving (or not) the performance and achievement of the organization's objectives.

The guiding principles in ISO/IEC 17021-5 (Ref J) are the basis for good assessment. People engaged in Maturity Assessment need the qualities described below, including in-depth understanding of Asset Management.

It is not necessary for each person in the assessing team to have the same capabilities, especially where an AMMA is assisted by less experienced staff. However, it is essential that the collective competence of the team is sufficient to achieve the assessment objectives. This may require more than one AMMA rather than assistants.

3.1 Bloom’s Taxonomy

Bloom describes 6 categories of intellectual achievement: remember, understand, apply, analyze, evaluate and create. If there is any doubt, when interpreting what is required in an AMMA, it should be remembered that AMMAs will be operating at the ‘create’, ‘evaluate’ and ‘analyze’ levels almost exclusively. Appendix A contains more details on Bloom’s taxonomy.

The credibility of the AMMA and the findings of the Maturity Assessment are vital both for the client organization and the AMMA. Amongst the following competences, some of the most important are the ability to communicate at senior level - and observe effectively, by whatever means, during assessments.

3.2 Abilities / Skills

The following list attempts to convey a clear sense of the range of skills and abilities required by an AMMA.

It is long because the clauses use verbs, selected according to Bloom’s taxonomy (Ref L), followed by a description of a relevant activity. Further compression or abbreviation is unhelpful.

1. Elicit information from a wide group of stakeholders about their asset management capabilities and reconcile information that may appear to be contradictory.

2. Distinguish the degree to which the organization has clarified and understood at all levels its purpose, goals and plans. (Do they all know what Value means to them and is this aligned with what they do?)

3. Examine the organization's understanding of its purpose and context, including the current and future needs of their stakeholders and appraise their responses to changing demands and environment. (Are they doing the right things and doing things right?)

4. Investigate how the organization identifies risks and opportunities and compare this with their assurance activities; and contrast both with their asset management objectives and achievements.

5. Question the leadership's true commitment to AM philosophies and principles and judge whether this is genuinely embedded in the culture at all levels.
6. Investigate cultural symptoms at all levels, eg behaviours, and evaluate the prevailing culture on the basis of evidence.

7. Examine the organization’s decision-making criteria and processes.

8. Consider how well the organization understands, and uses appropriately, historical and predictive data analytics. How well do they understand the limitations of analytics and data?

9. Over what timescales do they consider investment and all spend (CAPEX/OPEX) and how is it prioritized?

10. Evaluate how they manage data as an asset and their approach to the use of digital technology – both its benefits and limitations. Do they understand the difference between data and information and manage them both appropriately?

11. Examine their approach to, and management of, all asset management life cycle activities, including boundaries and management of interfaces with their supply chain, contractors (especially outsourcing) and clients.

12. Formulate improvement actions and priorities and justify the basis and likelihood of benefits.

13. Analyze whether the organization’s performance and results are sustainable and actually translate through asset management into value for stakeholders.

14. Understand the client organization’s stakeholder needs and/or requirements (and any difference).

15. Understand the client’s business environment, both current and future, and the likely impact (opportunity and risk) of change in those environments.

16. Be able to identify the likely value (e.g. Return On Investment, EVA, EBITDA etc) to the organization (Both negative and positive) of the identified changes.

17. Understand the value of using both open and closed systems thinking as appropriate.

3.3 Knowledge & Education

As a minimum, AMMAs should be educated to a level that qualifies them for full membership of a relevant professional association, or to higher levels of general or business education.

AMMAs should be thoroughly familiar with Asset Management theory and practice. In particular, they should understand References A to F and, ideally, possess relevant evidence of attainment.
3.4 Experience

Experience is a difficult matter to quantify but much easier to judge and recognize. A good AMMA will naturally consider the big picture; and take a holistic and strategic view of the client organization. But they will be capable of investigating critical evidence in detail to formulate their findings and report.

They will inspire trust and confidence in the top management of the client. They will recommend appropriate improvements and be able to defend them; and explain the rationale clearly and ability to manage conflict. AMMAs will demonstrate appropriate presentation skills for Boards and senior groups, as well as communicating to much more junior staff in appropriate detail and language.

Although expertise in Asset Management per se is vital, the AMMA needs to have relevant business experience and investigate how well Asset Management is integrated into the client organization’s ‘business as usual’. They must consider what the client needs to do to succeed (as well as to achieve better Asset Management in theory).

The AMMA will have wisdom as much as knowledge; and use insight as much as evidence. The client is likely to take for granted their Asset Management expertise and the AMMA’s credibility will depend on their understanding of the client and their challenges / opportunities.

An AMMA may have domain knowledge specific to the organization or sector. This is secondary but it may assist the AMMA in considering the best questions to determine the client’s state of AM Maturity.

An AMMA must have this experience in order to be effective.

- Direct experience and awareness of a variety of management and leadership styles.
- Direct experience of assessing different organizations without preconceived ideas or prescriptions of how they should apply Asset Management. (The AMMA must be able not only to transfer lessons from other organizations but also recognize that the client will not benefit from simply cloning the approach, whether from the same or another sector.)
- Breadth of experience in different organizations / industries and/or within varied roles within an organization (ideally, having progressed through a series of relevant roles).
- Experience of a range of business operating models and the ability to understand their comparative benefits and weaknesses.

An AMMA will find this experience advantageous.

- Familiarity with the whole life cycle process in a variety of sectors.
- Familiarity with the client’s Domain, Sector, Products, Services and Clients. (It may help the assessment team to understand the terminology, processes, technology and asset types specific to the client business sector, if only for client confidence.)
- Familiarity with various Quality and Excellence Ratings systems (Solomon, Deming, GRESB, EFQM etc) to inspire client confidence and ensure less well-known Asset Management criteria and ratings are not perceived as irrelevant.
Appendix A: Bloom’s Taxonomy of Learning

A1 Bloom's Taxonomy (in full: Bloom’s Taxonomy of Learning Domains, or Bloom's Taxonomy of Educational Objectives) was first published in 1956 under the leadership of Dr Benjamin Bloom, an American academic and educational expert. ‘Bloom's Taxonomy’ was originally created with the aim of developing a system of categories of learning behaviour. The intention was to assist in the design and assessment of educational learning. However, Bloom’s Taxonomy is now used by corporate trainers and HR professionals, coaches and teachers: the Taxonomy is relevant to all types of learning.

A2 At the outset, Bloom believed that education should focus on 'mastery' of subjects and the promotion of higher forms of thinking, rather than a utilitarian approach to simply transferring facts. Bloom demonstrated that most teaching tended to be focused on fact-transfer and information recall – the lowest level of training – rather than truly meaningful personal development.

A3 In 2001, the taxonomy was updated to reflect a more active form of thinking as shown below with the aspects of the taxonomy that Asset Management Maturity Assessors should be capable of operating within.

A4 For more information on Bloom's taxonomy, see A Revision of Bloom’s Taxonomy by David R. Krathwohl, 2002. (Ref L)