



Certified Senior Principal in Asset Management (CSAM)

This document specifies the requirements for PEMAC’s “Certified Senior Principal in Asset Management”. PEMAC CSAM certification has been accredited by the World Partners in Asset Management (WPiAM) www.wpiam.com which means that when you are assessed as having met the requirements for CSAM Certification by PEMAC your certification will be recognized globally where CSAM, and its equivalents are recognized.

In the specification elements below, where bold italicised text is used, further information is detailed in the “Range Statement” section of the document.

Certification Level	Certified Senior Principal in Asset Management (CSAM)
Certification Level Descriptor	<p>The knowledge and skills to take responsibility for the design, establishment, updating and management oversight of application of an <i>Asset Management Framework (AMF)</i> in a significant area of business relating to a significant asset portfolio, requiring:</p> <ul style="list-style-type: none">• Awareness and advanced understanding of all the recognised <i>Domains</i> of Asset Management (AM), their inter-dependency and integration.• Awareness and advanced understanding of the key requirements for an integrated <i>AMF</i>.• The ability to synthesise and integrate complex knowledge (including eliciting such knowledge from a range of <i>Domain</i> experts).• <i>Meta-cognitive skills</i>.• Leadership and management skills.• The ability to communicate complex knowledge to a variety of audiences; and• The ability to manage the integration/relationship of asset management with other organisational management systems and processes. <p>No licensing, legislative, or regulatory requirements apply to this certification at the time of publication.</p>
Application of the Certification	<p>This certification is applicable to practitioners (or expert advisors thereto) responsible for the establishment, updating and management oversight of the application of a</p>



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holistic and integrated **AMF** across a significant area of the organisation's business, informed by the organisation's strategic objectives.

Certificants, typically as the leader of a multi-disciplinary AM team, or as an AM Expert (AME), will:

- Recommend policy, objectives, strategy, tactics, processes, and procedures; and
- Drive AM application and continual improvement.

ELEMENT

Elements describe the essential outcomes of a certificant for this competency.

1 Lead the review and development of an Asset Management Policy

2 Lead the review and development of a Strategic Asset Management Plan (SAMP)

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

1.1 **AMF Documents and Artefacts** that include the processes and procedures relating to AM Policy development are identified and confirmed.

1.2 Policy options are identified, analyzed, and selected in consultation with stakeholders.

1.3 The policy motivates and holistically indicates the principles to be adopted by the organisation in managing its assets.

1.4 The policy is documented, adopted, and communicated to stakeholders.

2.1 Relevant **AMF Documents and Artefacts** are identified and confirmed, process and change / improvement need, and tactics are noted, stakeholders consulted, implementation processes and procedures are noted, responsibilities allocated, and an implementation plan adopted.

2.2 The required inputs to the development / review of the SAMP are established and levels of confidence determined.

2.3 A holistic assessment of the strategic AM context and status is made and confirmed with stakeholders; AM objectives are reviewed / established; strategic options are identified and analysed, and integrated



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- strategic AM scenarios (relating to assets, and management practice) are identified.
- 2.4 The strategic merits of various AM scenarios are reviewed, a preferred AM strategy is determined with stakeholder input, documented, and formal organisational adoption is secured. The SAMP is communicated to relevant stakeholders.
- 2.5 A strategic brief is prepared to inform the preparation of the AM Plans relating to significant asset portfolios / sectors, and where applicable, highlighting common themes, alignment, integration, and coordination needs.
- 3 Provide substantive contribution to the review and development of AM Plans
- 3.1 The processes and procedures for the development of AM Plans and the availability of relevant content is determined from the respective **AMF Documents and Artefacts**, and any identified needs for improvement of the AMPs, are all documented, reviewed in consultation with stakeholders, and the strategic brief for each AMP is established. The tactics, allocation of responsibilities, coordination and integration requirements, and schedule for preparation of each AMP is determined and agreed.
- 3.2 Application by others of the agreed processes, tactics and schedule for the development of the AMPs across the asset portfolio(s) under the control of the organisation (or within the respective area of responsibility) are monitored for efficacy, compliance with the brief and agreed procedures, progress and quality.
- 3.3 The modelling, analysis, determination of appropriate lifecycle management tactics, assessment of prevailing AM Practices and determination of an improvement plan, and preparation of an AMP for a particular asset or portfolio is undertaken in compliance with the strategic brief, established processes and procedures, and quality requirements, in consultation with portfolio and/or **Domain** experts, as necessary.
- 3.4 The quality of the AMPs is assured and validated in accordance with organisational requirements or obligations and, where appropriate, corrective action is identified, agreed, and acted upon. Final
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		documents are motivated and recommended to the organisation for approval.
4	Ongoing practice improvement	4.1 Stakeholders are made aware of their monitoring and Reporting Obligations relating to the implementation of AM Plans. This relates to the target asset lifecycle Activities and AM practice improvement actions.
		4.2 Adherence to the agreed reporting requirements is monitored and corrective action is taken where necessary. Similarly, initiatives are monitored against target risk, financial and performance management profiles and corrective action considered in conjunction with stakeholders where necessary. Progress reporting is made to the organisation's committee responsible for AM / responsible person in line with agreed procedures.
		4.3 Corrective steps are taken as instructed by the organisation's committee responsible for AM / responsible person.
5	Lead the review and development of AMF Documents and Artefacts	5.1 Available AMF Documents and Artefacts are determined Previously agreed AMF improvement needs are noted. The implementation tactics, change management implications, schedule for preparation, and allocation of responsibilities are determined in consultation with stakeholders.
		5.2 Implementation progress is monitored, the quality of outputs is reviewed, and the content, alignment, and integration are checked. Change management needs are confirmed. Motivation is made for approval of the final AMF Documents and Artefacts by the organisation, and upon approval, the requirements are communicated to the relevant stakeholders.
6	Monitor implementation of. The AMF Documents and Artefacts	6.1 The process and requirements for reporting progress in the implementation of the agreed improvements to the AMF Documents and Artefacts are established in consultation with the respective stakeholders, documented and communicated.
		6.2 Adherence to the agreed reporting is monitored and corrective action taken where necessary. Progress is monitored and intervention / corrective action



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		considered where necessary to achieve the agreed changes. Progress reporting is made to the organisation's committee responsible for AM / responsible person.
	6.3	Corrective steps are taken as instructed by the organisation's nominated committee responsible for AM / responsible person.
7	Monitor implementation of the AM Practices Improvement Plan	
	7.1	The process and requirements for reporting progress and quality in the implementation of the agreed AM practices improvement actions (stated in the AM Plans and summarised in the SAMP) are established in consultation with the respective stakeholders, documented and communicated.
	7.2	The quality of the practice improvements is assessed according to agreed procedures, and the need for corrective action flagged where necessary. Reporting on progress and quality is made to the organisation's committee responsible for AM / responsible person.
	7.3	Corrective steps are undertaken as instructed by the organisation's committee responsible for AM / responsible person.
8	Align and integrate AM practice	
	8.1	Alignment and effective integration are achieved across all the respective Domains of AM applicable to the AMF of the organisation, including integrated analysis and reporting.
	8.2	Appropriate application and interpretation of Financial Aspects of AM, including statutory reporting, are displayed.
9	Provide AM leadership	
	9.1	Leadership in AM and opportunities for personal development are provided to stakeholders from diverse technical, financial, and cultural backgrounds.
	9.2	A supportive workplace culture is adopted that validates and assures robust understanding of AM principles by the stakeholders in the respective Domains of AM.
	9.3	Professional judgement is demonstrated.
	9.4	Stakeholders are engaged to determine their respective needs.
	9.5	Sound technical judgement and awareness and understanding of industry practice in AM is displayed.



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9.6 Effective written and verbal communication skills are displayed.

REQUIRED SKILLS AND KNOWLEDGE

Required skills:

Demonstrated successful application, in a line management, Domain expert, or consulting support role relating to a significant asset portfolio (in terms of its nature, size, and risk exposure), of the following competencies, in line with recognised good practice:

- Lead the review and development of AM Policy.
- Lead the review and development a Strategic Asset Management Plan (SAMP).
- Lead the review and development of AM Plans (AMPs).
- Monitor the implementation of AM Plans.
- Lead the review and development of ***AMF Documents and Artefacts***.
- Monitor implementation of the ***AMF Documents and Artefacts***.
- Monitor implementation of the AM Practices Improvement Plan.
- Align and integrate AM practice; and
- Provide AM leadership.

Ability to:

- Address infrequently encountered issues and problems, outside those encompassed by standards and codes of practice for professional AM.
- Engage with wide ranging AM issues and resolution of significant problems arising from interactions between such issues, including interaction with stakeholders and other AM disciplines.
- Integrate all functional elements to form a complete and consistent system of management documented in an AMF; and
- Conceptualise alternative approaches, comprehend and define the risks and benefits of each, use informed professional judgement.

Required knowledge:

1. A minimum qualification in a Domain discipline related to the role (or recognised knowledge developed in the workplace).
 2. A minimum qualification or recognised training in asset management that meets the following level of cognition (thinking, learning, and understanding, based on the 2001 revised version of Bloom's Taxonomy):
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- a. Cognitive dimension: analysing.
- b. Knowledge dimension: Metacognitive; and
- c. Matrix activity: order, explain, differentiate, achieve, classify, experiment, calculate, summarise, and interpret.

This will typically be a university or recognised training provider degree, though a lower level base qualification together with appropriate experience may be assessed to be equivalent. Note: generally, the lower the level of base qualification the more practical experience in line with the required knowledge and skills of this specification will need to be demonstrated). Qualifications will be assessed for compliance by WPIAM.

3. A pass mark in the Certified Asset Management Assessor (CAMA) examination (set by the WPIAM) or recognised equivalent (as agreed by WPIAM).

Required experience:

A minimum of 8 years' experience within an AM environment. Depending on an AM professional's roles and responsibilities over his/her working life, and the scale, complexity and criticality of the organisation's Activities and respective asset base, the time needed to build a portfolio of demonstrated successful application of AM practice may require additional time, i.e. time served needs to be contextualised by varied application in a blended combination of the underpinning discipline and broader AM practice.

RANGE STATEMENT

The Range Statement relates to the certification level competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below

Domain-subject equivalence In the Global Certification Scheme, a 'Domain' is considered equivalent to the reference to 'subject' (or group of subjects) in the Global Forum for Maintenance and Asset Management (GFMAM) Landscape.

Domain may also refer to the tactical AM of specific asset types or classes, critical assets, or spatially discrete asset groupings such as facilities, networks, or process lines.



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Reporting Obligations include:

Risk, financial and performance management, and are in line with the organisation's **AM Processes and Procedures**.

Financial Management Aspects include:

Asset accounting, funding strategy, cost management, revenue optimisation, cost/benefit analysis, Net Present Value (NPV) assessment, Rate of Return (RoR) determination, and similar techniques.

AM Processes and Procedures are:

The integrated operational processes, models, roles and responsibilities, and support systems adopted by the organization to give effect to its AM Policy, AM Objectives and AMPs.

The **AM Framework (AMF)** is:

The system of management adopted by an organization to implement AM, including **AM Processes and Procedures**, AM Policy, AM Objectives, SAMP, AMPs and strategic, tactical and operational management systems.

AMF Documents and Artefacts include:

Documentation and artefacts that collectively constitute or are needed for implementation of the AMF. AMF Documents and Artefacts may be discrete or an AM construct, but also may be evident from drawing relevant parts of other organisational management systems, processes, and practices into an aggregated equivalent. For example, the organisation-wide document management system tool may be part of the AMF.

Activities comprise:

Application of tools, processes and practices utilised by an organization to manage or make decisions with respect to:

- Legislative requirements;
- Risk, performance, and financial management;
- Asset performance, capacity, utilisation and criticality;
- Asset availability, reliability, maintainability and supportability;
- Asset acquisition, creation, operations, maintenance and disposal;
- Environmental and social impacts;
- Safety
- Cost/affordability/willingness to pay;
- Asset value and depreciation;



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- AMF performance;
- Workplace resourcing, competency, and culture; and
- Alternative technologies.

Data and Information means:

Relevant knowledge of asset characteristics, performance, condition and management processes or associated financial data to permit efficient and effective operation, maintenance and management of the asset in order to meet organizational objectives.

AM Processes and Procedures are:

The integrated operational processes, models, roles and responsibilities, and support systems adopted by the organization to give effect to its AM Policy, AM Objectives and AMPs.

The **AM Framework (AMF)** is:

The system of management adopted by an organization to implement AM, including **AM Processes and Procedures**, AM Policy, AM Objectives, SAMP, AMPs and strategic, tactical and operational management systems.

AMF Documents and Artefacts include:

Documentation and artefacts that collectively constitute or are needed for implementation of the **AMF**. AMF Documents and Artefacts may be discrete or an AM construct, but also may be evident from drawing relevant parts of other organisational management systems, processes, and practices into an aggregated equivalent. For example, the organisation-wide document management system tool may be part of the **AMF**.

Operational Plans include:

The **Activities**, operational procedures, and resources adopted by the organization to implement the respective **Activities** within an Asset Management Framework.

Meta-cognitive skills are:

The ability to ‘think about thinking’. In this context, demonstrated application of meta-cognitive skills is about organisational metacognition – understanding and then managing in response to how and why the organisation thinks and acts in particular ways or follows particular processes and practices. Evaluation and selection of the most appropriate processes and practices as a learning organisation, developing and maintaining an appropriate culture, performance management, driving appropriate changes to the operating environment and determining appropriate methodologies, processes and practices for setting objectives, implementation, review, analysis and



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decision making constitute aspects of meta-cognitive thinking.

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, and the Range Statement.

Critical aspects for assessment and evidence required to demonstrate competency include:

Evidence of the following is essential:

- Summarised overview of the nature and duration of total work experience (minimum of 8 years in AM).
Note: Depending on an AM professional's roles and responsibilities over their working life, and the scale and complexity of the organisation(s) and the asset base (and asset criticality), the time needed to build a portfolio of demonstrated successful application of AM practice may require additional time (for example 8-12 + years for CSAM) i.e. time served needs to be contextualised by application in a blended combination of underpinning discipline and broader AM practice;
- Summarised overview of the nature, dates, and duration of AM work experience, including the nature, size and criticality of the asset portfolio, and respective AM roles.
- Corroboration of the experience and contribution / role of the applicant by a registered professional.
- Submission of key artefacts to support the competency assessment, for example:
establishment / review of the AM Policy;
preparation of a SAMP, AM Plan and AM Processes and Procedures, performance plan and compliance reports; AM practices assessment and improvement plan.
- Commitment to the Code of Ethics.
- Evidence of Domain qualification and experience.
Note: Obtaining a recognised formal qualification is



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one pathway to acquisition of knowledge (and in the case of competency-based training, also skills), though WPIAM recognises that a lower level base qualification plus appropriate experience can equate to a higher-level qualification; and

- Evidence of AM qualification and experience. *Note: Obtaining a recognised formal qualification is one pathway to acquisition of knowledge (and in the case of competency-based training, also skills), though WPIAM recognises that a lower level base qualification plus appropriate experience can equate to a higher-level qualification.*
- For each 3-year period after certification, a summary of continuing professional development accrued, submitted within 6 months of the end of each such period, and, upon specific request, provision of support evidence within 28 days.

Context of and specific resources for assessment:

Assessment must ensure access to evidence of the nature, scale and criticality of the asset portfolio.

Method of assessment:

A range of assessment methods are used to assess practical skills and knowledge. The following are appropriate to this designation:

- Review of artefacts submitted by the applicant, supported by a declaration by the applicant and reference to confirm the specific role of the applicant in the preparation of the document.
- Review of the applicant's response to queries / clarifications requested by the assessors; and
- Interview (optional – where necessary to confirm or clarify competency).

Guidance information for assessment:

Holistic assessment relevant to the industry sector, workplace and job role is recommended.

In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge.



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Assessment processes and techniques must be appropriate to the language and literacy capacity of the candidate and the work being performed.

Where the candidate was part of a team that co-developed submitted evidence, their role must be clearly defined and may require confirmation from the workplace and interview by the assessor or other validation to demonstrate knowledge and ability.

Applicants may be operating within a mature AM environment or one that is in a formative phase. The organisational maturity within which the applicant is operating will inevitably impact on the way an applicant has undertaken their respective Activities and hence evidence presented, and therefore needs to be taken in to account. It is the applicant's competence that is being assessed, not the organisation's maturity.

Country-specific interpretation of qualifications and, where necessary, other requirements stated in this specification, will be confirmed by WPiAM.