



ASSET MANAGEMENT COUNCIL

AMBOOK Publication
ASSET MANAGEMENT BODY OF KNOWLEDGE

001

Companion Guide to ISO 55001

Edition 1.1



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AMBoK Publications

AMBoK Publications are issued for the information and guidance of the asset management community, following endorsement by the Asset Management Council Asset Management Body of Knowledge (AMBoK) Team.

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Future Editions

AMBoK Publications are reviewed regularly and refined as appropriate. Comments are welcome and may be directed by email to publications@amcouncil.com.au.

Disclaimer

All mention of, and reference to, ISO 5500X Suite of Standards (including ISO 55000 - Overview, principles and terminology; ISO 55001 - Management systems — Requirements; and ISO 55002 - Management systems — Guidelines for the Application of 55001) refer to the 2013 International Standard versions.

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Authors and Technical Editors

AMBoK Team Members

- Deryk Anderson
- Mo Barghash, Asset Management Council
- Michael Killeen
- Daniel Masters
- Gary Winsor

AMBoK Commissioner

- Peter Kohler, Kohler Engineering

Contributors

- Jim Kennedy, Interlogis Consulting Pty Ltd
- John Hardwick, Networks NSW
- Robert Sloan

Editor

- Madeleine Berenyi, Asset Management Council



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Companion Guide to ISO 55001

Preamble

Asset management is designed to achieve an appropriate balance of cost, risk and asset performance. As asset management is inextricably linked to the objectives of the organisation - effective asset management objectives and asset management plans instantiate the organisational objectives - the importance of asset management to organisations has become more widely recognised.

The increased recognition of the criticality of asset management in achieving organisational objectives requires the examination of the need for, and performance of, both assets and asset management systems in a systemic and predictable manner.

The importance of asset management has been resoundingly reinforced with the release of the International Standards Organisation (ISO) 5500X Asset Management suite. The ISO 5500X Asset Management suite comprises of three standards, namely:

- ISO 55000 Asset management – Overview, principles and terminology;
- ISO 55001 Asset management – Management systems – Requirements; and
- ISO 55002 Asset management – Management systems – Guidelines for the application of ISO 55001.

The importance of asset management has not only been reinforced by these standards, but there is now a clear and broadly accepted definition of assets, their business context and the requirements of an asset management system.

ISO 55001 identifies the requirements of a management system (for the management of assets) but also clearly positions asset management as a key element of the broader business management system including, but not limited to, safety management, people management and financial management.

The Asset Management Council is committed to advancing the knowledge and capability of the asset management community, including understanding asset management's relationship to achieving organisational objectives.

This AMBoK Publication was created as a companion to both ISO 55000 and ISO 55001 with the specific aim of advancing the knowledge of the community in using and applying ISO 55001.

About the Asset Management Council

The Asset Management Council is a Technical Society of Engineers Australia, the peak body for all engineering disciplines, and is a founding member of the Global Forum on Maintenance and Asset Management.

From our start in 1994, we have been committed to the education about and promotion of asset management and maintenance practices in industrial, commercial, academic and government sectors. Our vision is 'enabling benefits for all from effective use of assets'. We provide a platform for technical knowledge to be learnt and shared, and opportunities for networking through key activities. As a national not for profit organisation we provide independent information and guidance on asset management across the multitude of industry sectors and professional roles in asset management, both in Australia and globally.

Our objectives are to:

- Strengthen and enhance the asset management and maintenance engineering capabilities of asset management practitioners and organisations
- Promote excellence in the practice of asset management and maintenance engineering
- Promote practitioner participation in, and contribution to activities of the Company
- Facilitate linkages at national and international levels
- Facilitate active participation from other disciplines and professions; and
- Encourage research and increase the body of asset management knowledge.

The Asset Management Council continues to grow as a greater number of organisations understand the importance of employing asset management principles to enhance their organisational capability. Our membership base reaches far and wide, and has representation from a range of asset intensive industry sectors and service providers, including government and private organisations.

In order to undertake this leadership role in asset management in Australia, the Asset Management Council comprises a Board, national office staff, 13 regional Chapters and volunteers from across Australia. This dedicated group of people deliver a range of programmes to Asset Management Council members and the broader asset management community, including the Asset Management Body of Knowledge (AMBoK) publications and models, asset management training and certification, asset management awards, The Asset Journal and articles and a range of conferences and forums.



Our vision: "Enabling benefits for all from effective use of assets"



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Purpose

AMBoK Publication 001: Companion Guide to ISO 55001 is published by the Asset Management Council to assist asset management practitioners in understanding the implementation of ISO 55000 and specifically ISO 55001.

This document is designed to:

- provide clarity on the scope of the ISO 5500X Suite of Standards;
- assist with the interpretation of requirements of the standards;
- provide guidance to organisations on typical criteria evidence to meet the requirements of ISO 55000 and 55001; and
- act as a record of the current status of requirements for the purpose of collecting broader stakeholder input.

This guide is not intended to provide specific industry sector applications or audit criteria.

About the Publication

An important part of the Asset Management Council's work over 2012/13 has been our active participation in the ISO committee (ISO PC 251); these standards will have significant implications for our members and industry in general, both in Australia and overseas. The Asset Management Council intends to be in the fore front of assisting members and the broader industry in the implementation of these ISO standards, including the development of tools such as this Companion Guide to ISO 55001. We commend this practical guide to you as a key source of advice on applying the ISO standards to your organisation.

The Asset Management Council is also able to bring a different perspective to ISO 55001, via a framework in which asset management can be understood and implemented, namely:

- Asset Management Concept Model;
- Asset Management System Model;
- Organisational Systems Model; and
- Capability Delivery Model (refer to Annex C).

These models combine to form a comprehensive asset management framework as a reference for asset management professionals and organisations (see back cover). For more information on the Framework for Asset Management refer to the AMBoK Publication 000: Framework for Asset Management (2nd edition).



Introduction to the ISO 5500X Suite of Standards

The ISO 5500X Suite of Standards describes the requirements for a 'management system for asset management'. This term is abbreviated to 'asset management system' within the standard and this AMBoK Publication.

The ISO 5500X suite consists of three standards:

- ISO 55000 - Overview, principles and terminology;
- ISO 55001 - Asset management — Management systems — Requirements; and
- ISO 55002 - Management systems — Guidelines for the Application of 55001.

Key Requirements of the ISO 5500X Suite of Standards

There are three key requirements for asset management contained in the ISO 5500X Suite of Standards. These key requirements are:

- The development and application of Stakeholder agreed decision making criteria;
- The achievement of a demonstrable balance between cost, risk and performance; and
- The selection of assets relevant to certification to ISO 55001.

Overview of ISO 55000 — Overview, principles and terminology

ISO 55000 documents the Fundamentals upon which asset management is based and provides an overview of asset management and asset management systems. It also provides the context for ISO 55001 and ISO 55002.

Fundamentals of Asset Management

The ISO 55000 contains four asset management fundamentals.

Asset management is founded on a set of fundamental beliefs. If any one of these fundamentals is missing from the management of assets, the organisation will likely see a reduction in the value that its assets provide. These fundamentals should directly influence an organisation's asset management systems and plans.

These fundamentals are described below.

Value

Asset management does not focus on the asset itself, but what the asset can do for the organisation and its stakeholders, that is, what value it can provide. Assets can deliver tangible and intangible, financial and non-financial value.

To determine an asset's value, a management system for the management of assets (the asset management system) employs decision-making processes that incorporate stakeholder determined criteria.

Through this management system, asset management plans can be developed and implemented that achieve the required asset performance and hence deliver the value to the organisation.

Alignment

Implementing an asset management system enables the organisation to translate organisational objectives into technical and financial processes, plans, activities and tasks, by applying a systematic

and systemic approach to decision-making.

This fundamental is focussed upon the achievement of organisational objectives and goals by planning, specifying, designing and implementing a system to manage assets. This system also should meet relevant company, industry and regulatory technical and financial standards.

The asset management system supports competent employees make timely and accurate decisions by providing a transparent, traceable and logical link between decisions, activities and tasks of employees to the organisational objectives.

Figure 1 below shows the linkages and alignment between stakeholder needs to the asset management system and the subsequent asset management plans. It is this alignment that enables asset management to transform strategic intent and desired outcomes into plans, activities and tasks aligned to the achievement of organisational objectives.

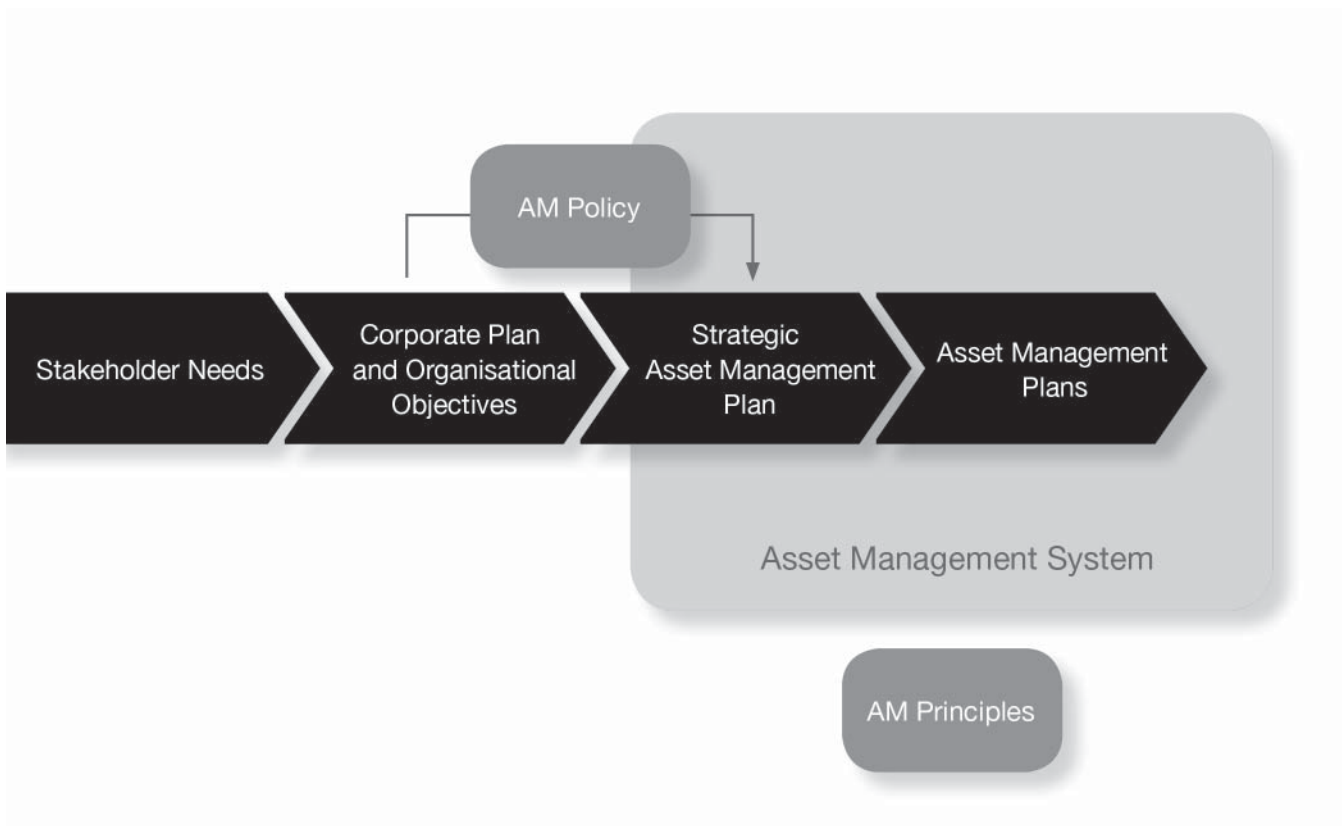


Figure 1: Organisational alignment between the stakeholder needs and the Asset Management System Requirements (Lafraia, JR & Hardwick, J. Living Asset Management)

Assurance

The need for assurance arises from the need to effectively govern an organisation. Assurance applies to assets, asset management and the asset management system.

Stakeholders require surety that assets and the associated management system can and will deliver what is required of them. To achieve this surety, senior management regularly reviews the processes that link organisational objectives to the required business functions and the performance of both the asset management system and the assets.

The continual improvement of both the asset management system and the performance of assets is part of the assurance function. This acts to continually assure stakeholders that the assets will meet requirements.

Leadership

Leadership and commitment from all levels of management is essential for successfully establishing, operating and improving asset management within the organisation. The leadership style of an organisation should support both the achievement of organisational objectives and the relationship to the actions of employees. For asset management to be successful, employees should understand these objectives, and their role in achieving them. Such commitment should ideally come from all levels of the organisation.

Regular consultation with employees and service providers about changes or improvements to the asset management system is important as employees must be competent in completing their responsibilities, whilst working toward the collective organisational outcomes and goals.

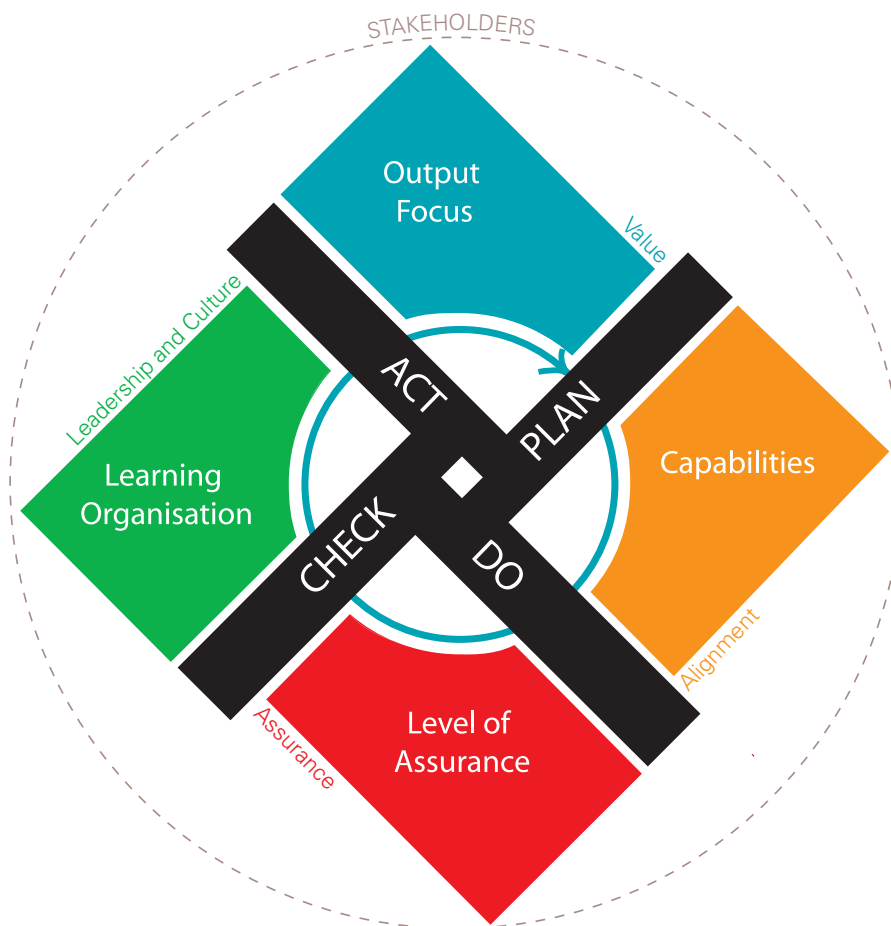


Figure 2 – Asset Management Fundamentals.

Figure 2 illustrates the application of the Fundamentals within asset management. The Model in Figure 2 also shows the direct relationship between the ISO Fundamentals and the AM Council Key asset management Principles.

Overview of ISO 55001 Asset management – Management systems – Requirements

This Standard specifies the various requirements for an asset management system. Any organisation either establishing or having an established asset management system, can adopt this standard.

However, should an organisation seek Certification, the organisation must determine which assets are subject to Certification using ISO 55001.

This Standard is primarily intended for use by several different groups of people, both internal and external to the organisation, including those involved directly with the asset management system, those involved with asset management activities in general, as those needing to meet various organisational requirements (e.g. legal, regulatory, contractual etc.).

Asset Management System

ISO 55001 describes the key components of an asset management system. In brief, an asset management system is used to direct, coordinate and control asset management activities. It provides improved risk control and assures the achievement of asset management objectives on a consistent basis.

However, not all asset management activities can be formalised through an asset management system; for example, aspects such as culture, motivation, etc. are not managed through the asset management system, but they have significant influence on the achievement of asset management objectives. The elements of the asset management system should be viewed as a set of tools, which includes: policies, plans, business processes and information systems, which are integrated to enable an assured delivery of asset management activities.

Figure 3, from the AM Council AMBoK book illustrates the relationship between the elements of the asset management system.



Figure 3 – Asset Management System.



Industry Specific Information

The IECTC 56 Dependability committee is currently in the process of developing a Technical Specification that documents the relationship between ISO 55000 and ISO 55001 to the IEC Dependability Standards and the International Financial Reporting Standards. This technical specification document is expected to be available in June 2014.

A number of Asset Management Council members are participating in the development of this specification.

This technical specification is intended to provide a number of benefits to enable industry specific guidelines to be developed, using a common structure and common technical and financial terminologies.

ISO 55002 — Management systems — Guidelines for the Application of 55001

This guide will not cover this portion of the standard.



How to use this AMBoK Publication

This guide is designed to be read and used side-by-side with the ISO 55001:2013 standard itself.

ISO 55001 contains over 70 'shall statements' that, for certification purposes, will require supporting evidence. The following table identifies each such 'shall statement' in part, provides notes and example evidence relevant to the statement, and then a typical artefact (document etc.) in which such evidence might be found. There is then room for the reader to list artefacts relevant to their organisation, as well as what successful implementation of the shall statement would look like in their organisation. The table is laid out as such:

0.0 Example ISO Section Header (X Parts)	
0.0	Example part ISO 'shall' statement
Part X of X	
Note	Further explanation or description of the above shall statement
Evidence Example	Evidence or proof of satisfying the shall statements
ISO artefact	Specific typical document in which the shall statement is evidenced
Your organisation artefact	Blank space for the reader to name document/s relevant to their organisation, in which the shall statement is evidenced
If this shall was implemented, what would success look like in your organisation?	Blank space for the reader to describe what successful implementation of the shall statement would look like in their organisation

It is not possible to document artefact names relevant to every industry and organisation; therefore each organisation should use the table as the basis of determining its relevant artefacts for certification purposes.

ISO 55001 Section 4: Context of the organisation



Understanding the organisation and its context (2 Parts)	
4.1 Part 1 of 2	The organisation shall determine ...
Note	<ul style="list-style-type: none"> • This requirement is to demonstrate that an organisation has considered potential factors influencing its outcomes when determining the requirements for an asset management system. • Internal factors are organisational strengths and weaknesses and may include existing systems and processes, culture and available technology. • External factors refer to influences that the organisation has limited control over and may include political, economic, regulatory, geographic, competitive and technical considerations.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan clearly documents the process for considering internal and external factors as part of the development and improvement of the asset management system. • Internal and external factors are identified as part of the strategic asset management plan. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>4.1 Part 2 of 2</p>	<p>Asset management objectives, included ...</p>
<p>Note</p>	<ul style="list-style-type: none"> • This requirement is to demonstrate that the asset management objectives and organisational objectives are aligned, that is, the asset management objectives support the achievement of those objectives in relation to the use of assets. • The asset management objectives both recognise and integrate with other objectives of the organisation, so that the totality of all the organisation’s management system objectives achieves the organisational objectives. • The statement of asset management objectives are required to be included in the body of the strategic asset management plan. • Asset management objectives should be specific, measurable and verifiable. • Asset management objectives can be strategic, tactical or operational in nature.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies a process for designing, implementing and reviewing asset management objectives including the process for: <ul style="list-style-type: none"> ○ linking asset management objectives to organisational objectives; and ○ integrating all management system objectives. • The strategic asset management plan clearly documents the asset management objectives. • The strategic asset management plan shows a clear link between the asset management objectives and the organisational objectives <u>and</u> to other management system objectives. • Objectives are reflected in individual asset management plans. • Or similar.
<p>ISO Artefact</p>	<ul style="list-style-type: none"> • Strategic Asset Management Plan
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



4.2 Understanding the needs and expectations of stakeholders (1 Part)	
4.2 Part 1 of 1	<p>The organisation shall determine:</p> <ul style="list-style-type: none"> — the stakeholders that are ... — the requirements and expectations... — the criteria for asset management... — the stakeholder requirements for ...
Note	<ul style="list-style-type: none"> • This requirement is to demonstrate that an organisation has considered the identity and requirements of its stakeholders when determining the requirements for an asset management system. This requirement also provides assurance that the decision making processes implemented by an organisation take into account the requirements of stakeholders. • Stakeholders can be both internal and external to asset management and to the organisation, and could include government, shareholders, customers, community, consumers, employees, partners and suppliers.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies a process for the management of stakeholders. • A documented stakeholder analysis exists. • A document exists, signed by the general manager or chief executive officer, that specifies approved qualitative and quantitative decision making criteria. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan • Stakeholder Analysis
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

4.3 Determining the scope of the asset management system (5 Parts)	
4.3 Part 1 of 5	The organisation shall determine ...
Note	<ul style="list-style-type: none"> • The standard does not require all assets within an organisation to be subject to management by the asset management system for certification purposes. • The strategic asset management plan clearly defines the scope of the asset management system with respect to other management systems used by the organisation (if any). • The asset management system must clearly identify which assets are under the control of the asset management system.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies the criteria for identification of applicable assets. • The strategic asset management plan clearly identifies which assets are included within the scope of the asset management system. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan
4.3 Part 2 of 5	The scope shall be ...
Note	<ul style="list-style-type: none"> • The identification of applicable assets must be consistent with the asset management policy and asset management objectives. • The asset management system must clearly defend the scope of the asset management system in terms of the asset management policy and asset management objectives.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan should clearly articulate the rationale for scope of the asset management system in terms of the asset management policy and asset management objectives. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan
Your Organisation Artefacts	



<p>If this shall be implemented, what would success look like in your organisation?</p>	
<p>4.3 Part 3 of 5</p>	<p>When determining this scope...</p> <ul style="list-style-type: none"> — the external and internal... — the requirements referred to... — the interaction with other....
<p>Note</p>	<ul style="list-style-type: none"> • The identification of applicable assets must be consistent with the internal and external issues identified and documented in the strategic asset management plans. • The asset management system must clearly defend the scope of the asset management system in terms of: <ul style="list-style-type: none"> ○ the internal and external issues; and ○ the scope of other management systems used by the organisation (if any).
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan must clearly articulate the rationale for scope of the asset management system in terms of the internal and external issues identified. • Or similar.
<p>ISO Artefact</p>	<ul style="list-style-type: none"> • Strategic Asset Management Plan
<p>Your Organisation Artefacts</p>	
<p>If this shall be implemented, what would success look like in your organisation?</p>	
<p>4.3 Part 4 of 5</p>	<p>The organisation shall define ...</p>

Note	<ul style="list-style-type: none"> • The scope of the asset management system is defined by the assets and associated asset capabilities. • The asset management system identifies the rationale for inclusion of specific assets within the scope of the asset management system.
Evidence Example	<ul style="list-style-type: none"> • A document (usually in the Strategic Asset Management Plan) identifying the asset portfolio covered by the asset management system. • The documented asset portfolio forms part of, or is clearly linked to, the strategic asset management plan. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
4.3 Part 5 of 5	The scope shall be ...
Note	<ul style="list-style-type: none"> • This requirement is to ensure that the scope of the asset management system is appropriately documented.
Evidence Example	<ul style="list-style-type: none"> • Documents exist as part of, or clearly linked to, the strategic asset management plan that meet all of the requirements of the scope of the asset management system, including: <ul style="list-style-type: none"> ○ the criteria for identification of applicable assets; ○ scope rationale in terms of the asset management policy and asset management objectives; ○ scope rationale in terms of internal and external issues; ○ asset portfolio covered by the asset management system; and ○ scope of the asset management system in terms of the boundaries with other management systems used by the organisation. • Or similar.
ISO Artefact	<ul style="list-style-type: none"> • Strategic Asset Management Plan



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

4.4 Asset management system (2 Parts)	
4.4 Part 1 of 2	The organisation shall establish...
Note	<ul style="list-style-type: none"> This requirement is to ensure that organisations establish, implement, maintain and continually improve an asset management system.
Evidence Example	<ul style="list-style-type: none"> The organisation has approved the establishment, implementation, maintenance and continual improvement of an asset management system. The evidence is the relevant documentation that supports that approval for an asset management system, by top management. Such evidence may include: <ul style="list-style-type: none"> asset management system scope and project approval; asset management system budget statements and approvals; and asset management system review and audit approvals. Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



<p>4.4 Part 2 of 2</p>	<p>The organisation shall develop ...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The purpose of a strategic asset management plan (SAMP) is to document the goals and objectives of asset management and the means of achieving those goals and objectives. • The purpose of this requirement is to demonstrate an understanding of the means of delivery of asset management outputs and to clearly demonstrate a link between the asset management objectives and the processes, plans, organisational structure and support resources required to deliver them. • The strategic asset management plan contains: <ul style="list-style-type: none"> ○ asset management objectives; ○ requirements for the asset management systems; ○ requirements for asset management plan development; ○ scope of the asset management system; and ○ processes systems and activities. • A hierarchy of documents is acceptable to meet the requirements of the SAMP in the case of complex or large scale systems. • Separate documents for SAMP and asset management policies are not required in the case of simple or small scale systems. • The timeframe of the SAMP extends beyond the normal business planning horizon to capture life cycle aspects.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • A documented SAMP exists. • The SAMP contains the asset management objectives. • The SAMP clearly articulates the link between the organisational objectives and the asset management objectives. • The SAMP contains the requirements for an asset management system, see Annex A for details. • The SAMP documents the requirements for individual asset management plans, see Annex A for details. • The SAMP describes the rationale for, and links to, processes, systems and activities that form the asset management system. • Or similar.
<p>ISO Artefact</p>	<p>Strategic Asset Management Plan</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	

ISO 55001 Section 5: Leadership



5.1 Leadership and commitment (1 Part)	
<p>5.1 Part 1 of 1</p>	<p>Top management shall demonstrate...</p> <ul style="list-style-type: none"> — ensuring that the asset... — ensuring the integration of... — ensuring that the resources... — communicating the importance of... — ensuring that the asset... — directing and supporting persons... — promoting cross-functional collaboration... — promoting continual improvement; — supporting other relevant management... — ensuring that the approach... <p>NOTE Reference to “business”...</p>
Note	<ul style="list-style-type: none"> • This requirement is about leaders and managers within organisations demonstrating commitment to asset management principles and processes. • Commitment is demonstrated through actions and outcomes rather than processes and intent. • ‘Top management’ is a term that goes beyond the limit of functional responsibility for asset management and should include executive managers and the board depending on the size and structure of the organisation.
Evidence Example	<ul style="list-style-type: none"> • Processes exist that require top management to participate in appropriate asset management system processes. These may include: <ul style="list-style-type: none"> ○ setting policy; ○ high level risk decision making; ○ involvement in management review of policies and objectives; ○ endorsing decision making processes; and ○ owning high potential incidents and non-conformances. • There is a process requiring that top management is involved in the management of risk. • Management inclusion in continual improvement processes is demonstrated. • Top management is involved in the performance review of the asset management system. • Integration of the asset management system with other management systems within the organisation. • Communication schedules exist and are monitored. • A specific agenda exists for communication meetings and sessions. • There is clear evidence of actions arising from management communication and meeting sessions. • Or similar.
ISO Artefact	No artefact is specified

<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



5.2 Policy (2 Parts)	
5.2 Part 1 of 2	<p>Top management shall establish...</p> <ul style="list-style-type: none"> a) is appropriate to the... b) provides a framework for... c) includes a commitment to... d) includes a commitment to...
Note	<ul style="list-style-type: none"> • The asset management policy demonstrates management intent with respect to the management of assets within the organisation. • The asset management policy describes the principles of asset management and the intentions of the organisation with regards to the management of assets. • The intent of this requirement is to demonstrate the commitment of an organisation to asset management and provide a foundation for the traceability of activities within the asset management system.
Evidence Example	<ul style="list-style-type: none"> • A documented asset management policy exists. • The asset management policy is appropriately endorsed or authorised by management. • The asset management policy is consistent with the organisational strategic plans and other policies of the organisation. • Or similar.
ISO Artefact	Asset management policy
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>5.2 Part 2 of 2</p>	<p>The asset management policy...</p> <ul style="list-style-type: none"> — be consistent with the... — be consistent with other... — be appropriate to the... — be available as documented... — be communicated within the... — be available to stakeholders... — be implemented and be....
<p>Note</p>	<ul style="list-style-type: none"> • The contents of an asset policy can include: <ul style="list-style-type: none"> ○ relevant asset management principles for the organisation; ○ high level asset management roles and responsibilities; ○ relevance (importance) of asset management to the organisation; and ○ a date for currency and review. • The intent of this requirement is to ensure that the asset management policy is sufficient to meet the requirements of asset management within the organisation, including its asset management system.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • A documented asset management policy exists. • The asset management policy demonstrates recognition and relevance of other organisational policies. • A review schedule exists for the asset management policy. • The asset management policy is appropriately communicated to asset management stakeholders. • The asset management policy has high visibility in the workplace. • The asset management policy is communicated as part of employee contract or induction. • The asset management policy is understood by individuals within the organisation. • Or similar.
<p>ISO Artefact</p>	<p>Asset management policy</p>



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

5.3 Organisational roles, responsibilities and authorities (2 Parts)	
5.3 Part 1 of 2	Top management shall ensure ...
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that the necessary responsibilities for the asset management system and its outcomes are identified and assigned. • Authority refers to the legitimacy of an individual to perform or manage within a domain, role or function. • Authority is of a formal nature and can have an executive, technical or financial basis. • Responsibility refers to the accountability of an individual for the actions or outcomes of a role. • Responsibility and authority are required in equality for an individual to be effective in their role.
Evidence Example	<ul style="list-style-type: none"> • There is a clear statement documented on the principles of delegation. • A responsibility assignment matrix or similar document exists for asset management roles. • An organisational structure exists that demonstrates the authority of individual positions in asset management roles. • A delegation of financial authority is documented. • A technical (principle) authority for asset management roles is documented. • Role descriptions exist for all individual positions involved in asset management processes. • The delegation of responsibilities and authorities is consistent with the asset management policy. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



<p>5.3 Part 2 of 2</p>	<p>Top management shall assign...:</p> <ul style="list-style-type: none"> a) establishing and updating the... b) ensuring that the asset... c) ensuring that the asset... d) ensuring the suitability, adequacy... e) establishing and updating the... f) reporting on the performance...
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that responsibilities and authorities are assigned to individual positions for the implementation and improvement of the strategic asset management plan.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Documented responsibilities and authorities are assigned to individual positions for establishing and updating the SAMP, including the asset management objectives. • Documented responsibilities and authorities are assigned to individual positions for processes for ensuring that the asset management system supports delivery of the SAMP. • Documented responsibilities and authorities are assigned to individual positions for processes for ensuring that the asset management system conforms to the requirements of this International Standard. • Documented responsibilities and authorities are assigned to individual positions for processes for ensuring the suitability, adequacy and effectiveness of the asset management system. • Documented responsibilities and authorities are assigned to individual positions for processes for establishing and updating the asset management plans. • Documented responsibilities and authorities are assigned to individual positions for reporting on the performance of the asset management system to top management. • The delegation of responsibilities and authorities for elements of the asset management system is consistent with the asset management policy. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>

<p>Your Organisation Artefacts</p>	
<p>If this shall be implemented, what would success look like in your organisation?</p>	



ISO 55001 Section 6: Planning

6.1 Actions to address risks and opportunities for the asset management system (2 Parts)	
6.1 Part 1 of 2	<p>When planning for the...</p> <ul style="list-style-type: none"> — give assurance that the... — prevent, or reduce undesired... — achieve continual improvement.
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that risk based methodologies are applied by an organisation in pursuit of its asset management outcomes. • When planning the design, implementation, operation, support and improvement of the asset management system, the organisation should consider the external and internal issues relevant to its purpose that affect its ability to achieve the intended outcomes. It should also consider the relevant stakeholders and their requirements and expectations with respect to asset management. • When planning the design, implementation, operation, support and improvement of the asset management system the organisation should explicitly consider the risks associated with the design, the implementation, the operation, the support and the improvement of the asset management system. • The criteria for asset management decision making should include reference to a risk based methodology. • Risk based methodologies include the treatment of both risks and opportunities.
Evidence Example	<ul style="list-style-type: none"> • A risk based methodology exists for decision making within the organisation. • A common approach exists for the assessment, categorisation and treatment of risk within the organisation. • Risk registers exist at various levels within the organisation. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	



<p>If this shall be implemented, what would success look like in your organisation?</p>	
<p>6.1 Part 2 of 2</p>	<p>The organisation shall plan:</p> <ul style="list-style-type: none"> a) actions to address these... b) how to: <ul style="list-style-type: none"> — integrate and implement the... — evaluate the effectiveness of....
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that risk management plans are actioned and reviewed at regular intervals. • A risk management plan outlines the activities, responsibilities and resources required to treat identified risks and opportunities. • Multiple risk management plans may exist.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Risk management plans exist at various levels of the organisation. • All risk management plans are traceable back to a common risk management approach that uses approved decision making criteria. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall be implemented, what would success look like in your organisation?</p>	

6.2.1 Asset management objectives (4 Parts)	
6.2.1 Part 1 of 4	The organisation <u>shall</u> establish...
Note	<ul style="list-style-type: none"> • This requirement is to demonstrate that the asset management objectives and organisational objectives are: <ul style="list-style-type: none"> ○ aligned; and ○ that the objectives of each and every business function are individually necessary and are collectively sufficient to achieve those asset management objectives. • Asset management objectives at all levels of the organisation should be specific and verifiable.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies a process for designing, implementing and reviewing asset management objectives across each and every relevant business function. • The strategic asset management plan should clearly document the asset management objectives and the relevant functional objectives. • The strategic asset management plan should show a clear link between the asset management objectives and functional objectives. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



<p>6.2.1 2 of 4</p>	<p>When establishing its asset management ...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that appropriate requirements are considered when developing specific asset management plans. • Asset management plans are documents that detail the necessary actions to achieve the intended outcomes (capability?) from an asset. • Multiple documents may describe a plan for a specific document by function or discipline. • A single document may describe a plan for a number of assets or functions and disciplines for assets. • An asset management plan may include details of stakeholders, internal and external factors, technical and legislative requirements, performance and other capability requirements, specific and routine actions, opportunities, costs benefits and endorsements. • The asset management plan should identify the balance between cost, risk and performance.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Asset management plans exist. • Asset management plans are consistent with the strategic asset management plan. • Asset management plans are consistent with the objectives of asset management. • Asset management plans are consistent with the scope of the asset management system. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	

<p>6.2.1 Part 3 of 4</p>	<p>The asset management objectives...:</p> <ul style="list-style-type: none"> — be consistent and aligned... — be consistent with the... — be established and updated... — be established and updated... — be measurable (if practicable) — take into account applicable... — be monitored; — be communicated to relevant... — be reviewed and updated....
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that the asset management objectives are consistent with the components of the asset management system that they relate to and that the objectives meet a minimum standard. • When establishing the asset management objectives, those objectives must be demonstrated, aligned and consistent with relevant business guidance and directives. • A common mnemonic for objectives is SMART, requiring that objectives be: Specific, Measurable, Assignable, Realistic and Time-related.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies a process for designing, implementing and reviewing asset management objectives, including the process for linking asset management objectives to organisational guidance and directives. • The strategic asset management plan demonstrates a clear link between the asset management objectives and corporate guidance and directives. • The relationship between corporate guidance and directives is documented and demonstrated through the use of a Traceability Matrix that shows the relationship between each and every guidance and directive to where in the strategic asset management plan those are enacted. Examples include: <ul style="list-style-type: none"> ○ asset management policy; ○ stakeholder requirements; and ○ internal and external factors. • Asset management objectives are measurable. • The strategic asset management plan describes how asset management objectives are monitored. • Measures exist and are reported against asset management objectives. • The mechanism for the communication of asset management objectives with relevant stakeholders is described as part of the strategic asset management plan. • There is a schedule for the review and update of asset management objectives. • Or similar.
<p>ISO Artefact</p>	<p>Strategic Asset Management Plan</p>



<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>6.2.1 Part 4 of 4</p>	<p>The organisation shall retain...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that sufficient documentation and information exists to support the development and execution of the asset management objectives. • When planning the design, implementation, operation, support and improvement of the asset management system, organisations should include processes for the data and information management of relevant information on the asset management system. • Information management refers to the design, implementation, operation and improvement of information systems.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan clearly identifies processes for data and information management across the life cycle of the asset management system. • The strategic asset management plan should clearly document the data and information management requirements to support the asset management objectives. • Or similar.
<p>ISO Artefact</p>	<p>Refer to Strategic Asset Management Plan</p>

<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



6.2.2 Planning to achieve asset management objectives (6 Parts)	
6.2.2 Part 1 of 6	The organisation <u>shall</u> integrate...
Note	<ul style="list-style-type: none"> • The intent of this clause is to ensure that the outcomes of the asset management system are coordinated with the outcomes of other management systems within the organisation. • The activities of asset management within an organisation will impact on other organisational functions. • The activities of other functions within an organisation will impact on asset management. • When planning the design, implementation, operation, support and improvement of the asset management system, organisations should include: <ul style="list-style-type: none"> ○ processes for the integration of the achievement of asset management objectives with other relevant business functions and processes; and ○ processes for the integration with other business management systems and functions and processes. • Examples of other organisation functions include: <ul style="list-style-type: none"> ○ Human Resources ○ Marketing ○ Financial ○ Information Systems.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan identifies the other management systems within the organisation. • The strategic asset management plan explains how the outcomes of the asset management system are coordinated with the outcomes of other management systems within the organisation. • Documented processes exist that show how integration works between asset management and the other management systems within the organisation. • Verifiable evidence exists that the documented processes are applied. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	

<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>6.2.2 Part 2 of 6</p>	<p>The organisation <u>shall</u> establish...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that specific actions to achieve the intended outcomes from an asset management system are identified and documented. • Asset management plans are documents that detail the necessary actions to achieve the intended outcomes from an asset. • Multiple documents may describe a plan for a specific asset by function or discipline. • A single document may describe a plan for a number of assets or functions and disciplines for assets. • An asset management plan may include details of stakeholders, internal and external factors, technical and legislative requirements, performance and other capability requirements, specific and routine actions, opportunities, costs, benefits and endorsements. • Organisations should plan for the design, implementation, operation, support and improvement of the asset management plans that support the achievement of asset management objectives. • When planning the design, implementation, operation, support and improvement of asset management plans, organisations should consider the design, implementation, operation and improvement of an asset management system that will provide asset management plans that: <ul style="list-style-type: none"> ○ individually support and collectively achieve the asset management objectives; ○ utilise the agreed decision making criteria; and ○ achieve the appropriate balance of support costs, residual risk and system/asset performance. • The asset management plan should identify the balance between cost, risk and performance.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan describes the technical and financial processes to be used to identify the need for, develop the use of, and then implement and improve, asset management plans. • The strategic asset management plan describes the processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of asset management plans. • The strategic asset management plan describes the data item description of the required content of an asset management plan to be used by the organisation. • Asset management plans exist. • Asset management plans are consistent with the strategic asset management plan. • Asset management plans are consistent with the objectives of asset



	<p>management.</p> <ul style="list-style-type: none"> • Asset management plans are consistent with the scope of the asset management system. • Or similar.
ISO Artefact	<p>Strategic Asset Management Plan Asset Management Plans</p>
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
6.2.2 Part 3 of 6	<p>These asset management plan(s)...</p>
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that the asset management plans are consistent with asset management policy and the strategic asset management plan. • When planning the design, implementation, operation, support and improvement of asset management plans, organisations should consider the design, implementation, operation and improvement of an asset management system as part of the strategic asset management plan that will provide asset management plans that: <ul style="list-style-type: none"> ○ individually support and collectively achieve the asset management objectives within the Strategic Asset Management Plan; and ○ are consistent with the asset management policy.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan describes how asset management plans maintain consistency with the asset management policy. • Asset management plans exist. • Asset management plans are consistent with the strategic asset management plan. • Asset management plans are consistent with the objectives of asset management.

	<ul style="list-style-type: none"> • Asset management plans are consistent with the asset management policy. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
6.2.2 Part 4 of 6	The organisation <u>shall</u> ensure ...
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that the asset management plans are consistent with stakeholder requirements and consider external issues in their development. • When planning the design, implementation, operation, support and improvement of asset management plans, organisations should consider: <ol style="list-style-type: none"> 1. the external issues relevant to the design, implementation, operation, support and improvement of asset management plans that affect the ability to achieve the intended outcome; 2. the stakeholders that are relevant to the asset management plans; and 3. the requirements and expectations of these stakeholders with respect to asset management.



Evidence Example	<ul style="list-style-type: none">• The strategic asset management plan describes how asset management plans maintain consistency with the stakeholder requirements and external factors.• Asset management plans exist.• Asset management plans are consistent with the strategic asset management plan.• Asset management plans are consistent with the identified stakeholder relationships.• Asset management plans are consistent with the identified external factors.• Or similar.
ISO Artefact	Strategic Asset Management Plan Asset Management Plans
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>6.2.2 Part 5 of 6</p>	<p>When planning how to...</p> <ul style="list-style-type: none"> a) the method and criteria... b) the processes and methods... c) what will be done; d) what resources will be... e) who will be responsible; f) when it will be... g) how the results will... h) the appropriate time horizon(s)... i) the review period for... j) actions to address risks... <ul style="list-style-type: none"> — identification of risks and... — assessment of risks and... — determining the significance of... — implementation of the appropriate....
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that asset management plans contain sufficient content to meet the requirements of the asset management system. • Organisations should design, implement, operate, support and improve processes, plans and activities that support the achievement of asset management objectives. • When planning the design, implementation, operation, support and improvement of asset management objectives, organisations should consider the design, implementation, operation and improvement of an asset management system that: <ul style="list-style-type: none"> ○ provides technical and financial risk based decision making processes for the design, implementation, operation, support and improvement of the asset management objectives; ○ utilises the agreed decision making criteria; ○ considers the timeframes over which the asset management objectives are relevant; and ○ achieves the appropriate balance of support costs, residual risk and system/asset performance.



<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan identifies the processes used to identify the need for, develop the use of, and then implement and improve asset management plans. • The processes to be used to identify, analyse, synthesize and mitigate the risks associated with the development, operation and improvement of asset management plans. • The strategic asset management plan identifies processes and methods used to manage assets over their life. • Asset management plans identify a horizon. • Asset management plans identify activities to address identified risks and opportunities for specific assets. • Asset management plans identify the resources required to conduct the activities identified. • Asset management plans identify the necessary roles and responsibilities to conduct the activities identified. • Asset management plans identify a timeframe for activities. • The strategic asset management plan describes how the asset management plans will be evaluated. • Asset management plans contain details of funding and other financial implications. • A review schedule exists for asset management plans documented as part of the strategic asset management plan and for each separate asset management plan. • Asset management plans identify a priority (significance/criticality) based on their impact on the achievement of asset management objectives. • There is documented evidence of the execution of and compliance to asset management plans. • There is documented evidence of the improvement of asset management plans. • Or similar.
<p>ISO Artefact</p>	<p>Strategic Asset Management Plan Asset Management Plans</p>
<p>Your Organisation Artefacts</p>	

<p>If this shall be implemented, what would success look like in your organisation?</p>	
<p>6.2.2 Part 6 of 6</p>	<p>The organisation shall ensure...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to integrate the identification and treatment of asset management risks with the broader organisational risk management approach. • Contingency plans are activities applied to address exceptional risks where normal treatment or acceptance of a risk is insufficient to meet the outcomes of the asset management system. • Technical and financial risk based processes are applied to assets in their operating context. Such technical and financial risk based processes may include: <ul style="list-style-type: none"> ○ reliability and availability analysis and modelling; ○ maintainability and supportability analyses; ○ failure mode effect (and criticality) analyses; ○ reliability centred maintenance; ○ return on investment analyses and level of repair analysis; ○ safety case analyses; ○ job safety analyses. • Risk management principles should also be applied to the design, implementation, operation, support and improvement of the asset management system.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The strategic asset management plan describes how the asset management risk approach is consistent with, and integrated into the organisation's risk management approach. • Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system and the development of asset management plans. • A risk management plan is associated with the design, implementation, verification and validation of the asset management system. • A risk management plan is associated with asset management plans. • Relevant contingency plans exist for the asset management systems. • Risk register(s) exist for the asset management system. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

ISO 55001 Section 7: Support



7.1 Resources (2 Parts)	
7.1 Part 1 of 2	The organisation shall determine...
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that sufficient and suitable resources are available to implement and maintain the asset management system. • When planning the design, implementation, operation, support and improvement of the asset management system, organisations should provide the needed supporting resources commensurate with the business needs. • Supporting resources can refer to people, finance, logistic support (maintenance plans, training, manuals, spares including warehousing handling and transportation, special tools and facilities, computer support) access, information and data.
Evidence Example	<ul style="list-style-type: none"> • The strategic asset management plan identifies the resources required to implement and maintain the asset management system. • Supporting resources are demonstrated to be sufficient to meet the requirements to implement and maintain the asset management system. • Competencies required to implement and maintain the asset management system are identified. • Roles and responsibilities to implement and maintain the asset management system are maintained. • Individual positions are filled and assigned to the necessary roles and responsibilities. • Or similar.
ISO Artefact	Strategic Asset Management Plan
Your Organisation Artefacts	

<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>7.1 Part 2 of 2</p>	<p>The organisation shall provide...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that sufficient and suitable resources are available to implement and maintain the activities identified in the asset management plans. • When planning the design, implementation, operation, support and improvement of the asset management system, organisations should provide the needed supporting resources commensurate with the business needs. • When planning the design, implementation, operation, support and improvement of asset management plans, organisations should identify the necessary resources and supporting resources commensurate with the business needs. • Supporting resources can refer to people, finance, logistic support (maintenance plans, training, manuals, spares including warehousing handling and transportation, special tools and facilities, computer support), access information and data.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • The asset management plans identify the resources required to implement their activities. • Supporting resources are demonstrated to be sufficient to meet the requirements to implement the asset management plans. • Competencies required to implement the asset management plans are identified. • Roles and responsibilities to implement and maintain the asset management system are maintained. • Individual positions are filled and assigned to the necessary roles and responsibilities. • Approved work plans exist for the execution of asset management plans. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

7.2 Competence (1 Part)	
7.2 Part 1 of 1	<p>The organisation shall:</p> <ul style="list-style-type: none"> — determine the necessary competence... — ensure that these persons... — where applicable, take... — retain appropriate documented information... — periodically review current and...
Note	<ul style="list-style-type: none"> • The intent of this requirement is to ensure that individual positions are filled by people who are competent to fulfil the requirements of the roles and responsibilities to implement the asset management system. • The asset management system authorises, approves and documents individuals with the appropriate competencies to commit, spend and authorise financial commitments on behalf of the organisation. • The asset management system authorises, approves and documents individuals with the appropriate competencies to undertake implementation activities and tasks. • Competency refers to the knowledge, skills and behaviours of an individual that demonstrates an ability to meet the requirements of a role.
Evidence Example	<ul style="list-style-type: none"> • An approved and documented technical competency management approach exists. • Position descriptions exist that include both technical and financial delegations commensurate with assigned responsibilities and accountabilities. • Project and tasking delegations exist that authorise individuals to make decisions up to a certain risk threshold for specific projects for a specific time frame. • Project and Tasking Delegations exist that authorise individuals to make financial decisions up to a certain threshold for specific projects for a specific time frame. • Or similar.
ISO Artefact	ISO Artefact of competence



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

7.3 Awareness (1 Part)	
7.3 Part 1 of 1	<p>Persons doing work under...</p> <ul style="list-style-type: none"> — the asset management policy; — their contribution to the... — their work activities, the... — the implications of not....
Note	<ul style="list-style-type: none"> • In undertaking work (analysis and/or implementation tasks) people should be aware of the value their role contributes with respect to the achievement of the asset management objectives and in particular, the role of their work in relation to the work of others in the organisation.
Evidence Example	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the recognition of the value of people's activities and tasks: <ul style="list-style-type: none"> ○ Specific Position Description requirements ○ Induction Programme requirements ○ Process competency requirements ○ Internal and external communication plans and activities ○ Personal reward and improvement programmes. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



7.4 Communication (1 Part)	
7.4 Part 1 of 1	The organisation shall determine... <ul style="list-style-type: none"> — on what it will... — when to communicate; — with whom to communicate; — how to communicate
Note	<ul style="list-style-type: none"> • When undertaking business activities, the organisation should inform both internal and external stakeholders (individuals and/or organisations) of the value of those activities with respect to the achievement of the asset management objectives.
Evidence Example	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the recognition of the value of people's activities and tasks: <ul style="list-style-type: none"> ○ Stakeholder management plans ○ Induction Programme requirements ○ Internal and external communication plans and activities and management reviews of such plans ○ Minutes of Management review meetings related to communication of Asset Management decisions and activities ○ Organisational reward programmes. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

7.5 Information requirement (6 Parts)	
7.5 Part 1 of 6	The organisation shall determine...
Note	<ul style="list-style-type: none"> • When developing its plans and activities to support the management of its assets (through the development of asset management objectives and the design and implementation of the asset management system and asset management plans) organisations should examine the need for supporting data and information. Organisations should collect data, not because they can, but because they understand which asset data and financial data is required to make informed decisions. • Much of the information will be in support of the following shall statements: <ul style="list-style-type: none"> ○ Shall statement 6.2.2, part 5 - When planning how to... <ul style="list-style-type: none"> a) the method and criteria... b) etc. ○ Shall statement 6.2.2 part 6 - The organisation shall ensure.... ○ Shall statement 7.1, part 1 - The organisation shall determine... ○ Shall statement 7.2, part 1 - The organisation shall: <ul style="list-style-type: none"> — determine the necessary competence... — etc.
Evidence Example	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Data Models ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan ○ See evidence in support of shall statements 6.2.2 parts 5 and 6, 7.1 part 1 and 7.2 part 1 ○ Or similar. • Or similar.
ISO Artefact	No artefact is specified



<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>7.5 Part 2 of 6</p>	<ul style="list-style-type: none"> a) the organisation shall include... <ul style="list-style-type: none"> — the significance of the... — the roles and responsibilities... — the asset management processes... — the exchange of information... — the impact of quality...
<p>Note</p>	<ul style="list-style-type: none"> • When developing its plans and activities to support the management of its assets (through the development of asset management objectives and the design and implementation of the asset management system and asset management plans), organisations should examine the need for, and the risks associated with, the identification and gathering of supporting data and information. This should include the risks to the organisation of not having this information available. • Much of the information will be in support of the following shall statements: <ul style="list-style-type: none"> ○ Shall statement 6.2.2, part 5 - When planning how to... <ul style="list-style-type: none"> a) the method and criteria... b) etc. ○ Shall statement 6.2.2, part 6 - The organisation shall ensure... ○ Shall statement 7.1, part 1 - The organisation shall determine... ○ Shall statement 7.2, part 1 - The organisation shall: <ul style="list-style-type: none"> — determine the necessary competence... — etc.

<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan ○ See evidence in support of shall statements 6.2.2, parts 5 and 6, 7.1, part 1 and 7.2, part 1 ○ Or similar. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>7.5 Part 3 of 6</p>	<p>b) the organisation shall determine:</p> <ul style="list-style-type: none"> — the attribute requirements of... — the quality requirements of... — how and when information...
<p>Note</p>	<ul style="list-style-type: none"> • When determining the needed supporting data and information, the organisation should determine the format and the quality of the identified data and information.



<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Data Models ○ Document Management Plan ○ Technical Information Management Plan ○ Financial Management Plan. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>7.5 Part 4 of 6</p>	<p>c) the organisation shall specify...</p>
<p>Note</p>	<ul style="list-style-type: none"> • When determining the needed supporting data and information, the organisation should determine how that data and information is to be managed, from identification through to collection, validation storage, use and archiving, including data security and data recovery issues.

<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ An Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan. • Demonstration of compliance with the policy via procedures or processes for the management of information within the organisation. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



<p>7.5 Part 5 of 6</p>	<p>d) the organisation shall determine...</p>
<p>Note</p>	<ul style="list-style-type: none"> • When developing asset management objectives and need for a supporting asset management system, the organisation should use agreed terminology throughout all of its management systems, where possible.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information alignment needs: <ul style="list-style-type: none"> ○ The organisation's overall Business Management System structure and specific requirements and associated terminology, including: <ul style="list-style-type: none"> ▪ any business Information Management Plan; ▪ any business Data Management Plan, including data naming convention, etc.; or ▪ similar. • Demonstration of compliance with the policy via procedures or processes for the management of information within the organisation. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	

<p>7.5 Part 6 of 6</p>	<p>e) the organisation shall ensure...</p>
<p>Note</p>	<ul style="list-style-type: none"> • When developing its plans and activities to support the management of its assets (through the development of asset management objectives and the design and implementation of the asset management system and asset management plans), organisations should examine the need for consistency and traceability between the financial and technical data and other relevant non-financial data. i.e. asset management system linkages between physical assets and financial assets, including, and not limited to, accrual of operational expenditures and capital investments, depreciation, asset valuation, etc. • Much of the information consistency and traceability will be in support of the following shall statements: <ul style="list-style-type: none"> ○ Shall statement 6.2.2, part 5 - When planning how to ... <ul style="list-style-type: none"> a) the method and criteria... b) etc. ○ Shall statement 6.2.2, part 6 - The organisation shall ensure... ○ Shall statement 7.1, part 1 - The organisation shall determine... ○ Shall statement 7.2, part 1 - The organisation shall: <ul style="list-style-type: none"> — determine the necessary competence... etc.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the development and implementation of supporting information alignment needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan ○ Or similar. • Demonstration of system audits and corrective actions related to the consistency and traceability of data in the above plans. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



7.6.1 General (1 Part)	
7.6.1 Part 1 of 1	<p>The organisation's asset management...</p> <ul style="list-style-type: none"> — documented information as required... — documented information for applicable... — documented information determined by....
Note	<ul style="list-style-type: none"> • When developing its plans and activities to support the management of its assets (through the development of asset management objectives and the design and implementation of the asset management system and asset management plans), organisations should examine the need for financial and technical data and related documented information. • Much of the need for data and information and related documented information and competence needs will be in support of the following Shall statements: <ul style="list-style-type: none"> ○ Shall statement 6.2.2, part 5 - When planning how to... <ul style="list-style-type: none"> a) the method and criteria... b) etc. ○ Shall statement 6.2.2, part 6 - The organisation shall ensure... ○ Shall statement 7.1, part 1 - The organisation shall determine... ○ Shall statement 7.2, part 1 - The organisation shall: <ul style="list-style-type: none"> — determine the necessary competence ... — etc. • Further, when considering the development of the asset management system and the development of asset management plans, the organisation should consider need for complexity of process (usually related to the internal and external risk environment in which the organisation conducts its business activities) and the complexity of its asset base. • The asset management system documentation must identify areas of reference to ISO 55001 and the organisation's legal and regulatory requirements may be referenced in a statement of corporate intent, board or owner risk register. Evidence may include Management review minutes.
Evidence Example	<ul style="list-style-type: none"> • Refer to SAMP for details of: <ol style="list-style-type: none"> 1. the relationship between the technical and financial processes to be used to identify the need for, develop the use of, and then implement and improve asset management plans and the asset management objectives; and 2. the relationship between the asset management system processes and the asset management policy. • Refer to the following typical artefacts for the management of an asset management system: <ol style="list-style-type: none"> 1. Functional Performance Specification of the asset management system; 2. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; and 3. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system.

	<ul style="list-style-type: none"> • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



7.6.2 Creating and updating (1 Part)	
7.6.2 Part 1 of 1	<p>When creating and updating...</p> <ul style="list-style-type: none"> — identification and description (e.g.... — format (e.g. language, software... — review and approval for....
Note	<ul style="list-style-type: none"> • When identifying the need for, and then managing, data and information and documented information, the organisation should consider and document its management requirements for that data and information.
Evidence Example	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the management of data and information and documented information within the asset management system: <ul style="list-style-type: none"> ○ An Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan ○ Or similar. • Documented document control and information management systems including templates, samples and levels of access control, in accordance with the above plans. • Audit reports, system reviews and corrective action reports related to data and information and document control in accordance with the above plans. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

7.6.3 Control of documented information (3 Parts)	
7.6.3 Part 1 of 3	Documented information required by... <ul style="list-style-type: none"> a) it is available and... b) it is adequately protected...
Note	<ul style="list-style-type: none"> • There needs to be a formal control system around the key artefacts within the asset management system. This ensures that it is not only available to those who require it, but that they are looking at the most current version of the document. Moreover these controls also need to ensure that the information can only be accessed by those that have a genuine business need to see it. <ul style="list-style-type: none"> ○ This is especially the case as access to this information within the asset management system not only provides visibility of the organisations strategic plan but also how it intends to deploy its assets to achieve this plan.
Evidence Example	<ul style="list-style-type: none"> • Documented information required by the asset management system includes: <ol style="list-style-type: none"> 1. The organisational and/or strategic plan 2. The asset management policy 3. The strategic asset management plan 4. Relevant asset management plans. • And other asset documents or information required within the asset management system such as: <ul style="list-style-type: none"> ○ processes and procedures; ○ roles and responsibility matrices and/or position descriptions containing; ○ risk assessments; ○ asset performance management records; and ○ data within the Maintenance Information System. • Refer to the following typical artefacts for the management of data and information and documented information within the asset management system: <ul style="list-style-type: none"> ○ Information Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Financial Management Plan ○ Or similar. • Or similar. • The control of this documented information may be evidenced via the organisation’s document management system(s), and/or other systems which provide access to the information based upon a user’s access rights.
ISO Artefact	No artefact is specified



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
7.6.3 Part 2 of 3	For the control of... <ul style="list-style-type: none">— distribution, access, retrieval and...— storage and preservation, including...— control of changes (e.g...— retention and disposition.
Note	<ul style="list-style-type: none">• The integrity, security and accuracy of the document is clearly managed within the broader management system through revision management, update cycles and appropriate access controls. This means that there is some form of electronic library/document management system that contains all of the artefacts. There is also formal revision control on all documents that form part of the asset management system.<ul style="list-style-type: none">○ Revision control not only indicates all revisions that have been made, who made them and when, but also ensures artefacts are subject to formal periodic review at an appropriate interval, regardless of whether or not other changes have been made to them.

<p>Evidence Example</p>	<ul style="list-style-type: none"> • Control of documented information can be demonstrated by: <ul style="list-style-type: none"> ○ distribution and access and retrieval systems, which may take many forms ranging from network directories to relational databases and formal document management systems; ○ document control numbers and registers; ○ evidence of the control of changes includes revision tables in the front of management system documents, 'valid until' or 'do not use after' dates in the front of management system documents; and ○ mechanisms to return issues with documents to the document owner. • Storage of historical documented information in the form of older (i.e. non electronic) plans, blueprints, OEM drawings, manual etc. should consider their archival quality and preservation requirements, as well as how this documentation may be made available or preserved electronically for future use if required. • Refer to the following typical artefacts for the management of data and information and documented information within the asset management system: <ul style="list-style-type: none"> ○ Information Management Plan ○ Configuration Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Document Management Plan ○ Financial Management Plan ○ Or similar. • Or similar...
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



<p>7.6.3 Part 3 of 3</p>	<p>Documented information of external...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Increasingly, data and information from external organisations is integrated into the asset management system. Where this information is used as part of the asset management system, there needs to be a clear control system for it. This control system integrates the information into the asset management system using the same version and revision controls as would be expected for documents created internally. • In addition to these controls, there would also be an agreed process with the originator as to how errors found in the information are identified, communicated and addressed. Any references to the externally originated information would clearly show version and revision status of the source.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Documented information of external origin includes: <ul style="list-style-type: none"> ○ Market or supplier audit information ○ Proposals ○ Regulations and Acts ○ Legal advice ○ Illustrated parts catalogues ○ Price lists or quotes ○ OEM operating and maintenance manuals ○ Material Safety Data Sheets ○ OEM drawings ○ OEM wiring diagrams. • Refer to the following typical artefacts for the management of data and information and documented information within the asset management system: <ul style="list-style-type: none"> ○ An Information Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Financial Management Plan ○ Or similar. • Or similar...
<p>ISO Artefact</p>	<p>No artefact is specified</p>

Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



ISO 55001 Section 8: Operation

8.1 Operational planning and control (1 Part)	
8.1 Part 1 of 1	<p>The organisation shall plan...</p> <ul style="list-style-type: none"> — establishing criteria for the... — implementing the control of... — keeping documented information to... — treating and monitoring risks....
Note	<ul style="list-style-type: none"> • Organisations need to have evidence of a range of processes in place. From a(n): <ul style="list-style-type: none"> ○ risk management perspective, organisations need to be able to demonstrate the risk management processes and tools exist and that they are being applied appropriately and consistently. This includes: <ul style="list-style-type: none"> ▪ providing the agreed enterprise approach to risk management from both a process and tolerable level of risk perspective; and ▪ a formal risk register that is updated and applied as both part of ‘business as usual’ and as part of the planning cycle for specific events/projects; ○ asset management perspective, objective setting is done in a structured way with reference to stakeholder requirements. The process is performed and requirements are gathered from stakeholders and formally agreed to, and there is a clear linkage between the organisation’s objectives and the asset management objectives. The outcomes of this objective setting should be evident in the organisation’s financial management plans; ○ nonconformity and corrective action perspective, there are tools and systems accessible by all relevant parties that support the identification of nonconformities and a defined nonconformance identification process. The process ensures that all nonconformities are reviewed and assessed against the enterprise risk criteria and that actions are set accordingly; and ○ preventive action perspective, appropriate measures and the measurement frequencies have been established to identify potential failures and have sufficient time to react. These measures should be being reviewed with sufficient frequency to ensure corrective action can be implemented in a timely fashion.
Evidence Example	<ul style="list-style-type: none"> • Examples of the processes needed to meet these requirements include: <ul style="list-style-type: none"> ○ a corporately accepted risk management approach which reflects the organisation’s tolerance for risk across a range of risk categories; ○ demonstrable evidence of cases where outcomes of the application of the risk process has necessitated changes in the asset management system e.g. a highly undesirable situation was identified through the risk management process and an asset management plan was subsequently modified; ○ examples of where the development of an asset management plan has translated into another aspect of the business management system, such as a budget; ○ examples of where the application of a nonconformance



	<p>identification process has necessitated changes in the asset management system. This may include where a systemic issue was identified by expanding the scope of an ad-hoc investigation resulting from a nonconformance;</p> <ul style="list-style-type: none">○ an online nonconformance identification tool through which all relevant employees can raise a nonconformance exists and is utilised by employees; and○ the business performance measurement and technical performance measurement measures report and meetings are run, actions identified and minutes taken and actioned. <ul style="list-style-type: none">● Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

8.2 Management of change (3 Parts)	
8.2 Part 1 of 3	Risks associated with any...
Note	<ul style="list-style-type: none"> Where projects or 'changes' are made, a formal risk assessment is part of the change management process and this process is applied to ensure that potential impact on the asset management objectives are identified and managed. Clear guidance will exist on the size of the change that would initiate the risk assessment, but once deemed necessary, a normal risk assessment process would be followed. It is expected that the level of change necessitating a risk assessment would be defined within the risk management system.
Evidence Example	<ul style="list-style-type: none"> Examples of risk assessments associated with projects or change include: <ul style="list-style-type: none"> organisationally accepted guidance documents outlining how to assess the size of the change, the level of risk management associated with that change; previous project related risk assessments across all stages of the project lifecycle from project initiation, through design and into implementation. Risk assessments associated with each change of project phase and/or gate exist; previous change related risk assessments; and previous examples where the actions resulting from the risks assessments were recorded and followed up. Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
8.2 Part 2 of 3	The organisation <u>shall</u> ensure...
Note	Refer to shall statement 8.1, part 1.



Evidence Example	<ul style="list-style-type: none">• Examples of the management of risks and integration into other aspects of the organisation's management systems include:<ul style="list-style-type: none">○ maintenance funding and/or projects appearing within the budgeting cycle that have originated from asset management plans;○ organisational budget preparation management timelines that acknowledge asset management plans as inputs;○ asset management policy;○ a strategic asset management plan containing clear reference to the organisational objectives in both financial and non-financial terms;○ asset management plans;○ training needs analysis elements that relate to asset management competencies; and○ projects within the asset management plan that have demonstrably originated from outside the asset owners department or organisation.• Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>8.2 Part 3 of 3</p>	<p>The organisation shall control...</p>
<p>Note</p>	<ul style="list-style-type: none"> • This requirement ensures that the organisation not only makes changes in a structured way, but that it also learns from what it does; it ensures the Plan, Do, Check, Act (PDCA) cycle is 'closed'. Any major changes as per shall statement 8.2, part 1 are managed at the appropriate level (especially at the enterprise level) and integral to the project or 'change' management lifecycle is 'post implementation review' (PIR). The PIR will: <ul style="list-style-type: none"> ○ identify the business benefits that were to be achieved by the change and determine if those business benefits were achieved; and ○ have a process for and apply that process to determine what other changes have occurred as a consequence of the change and what the impact of these 'other changes' are.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Examples of the change control (in addition to those items in shall statement 8.2, part 1), include: <ul style="list-style-type: none"> ○ interdependency meeting notes; ○ N2 (n-squared diagrams) and/or enterprise interdependency heat maps; ○ formal change approval meeting minutes and approvals; ○ program coordination meeting minutes; and ○ individual's awareness and application of the change management approach. • Examples of the post implementation reviews, including: <ul style="list-style-type: none"> ○ triggers within the management system to initiate reviews of projects or changes; ○ meeting minutes, issues and follow-up actions will be available for those changes where the management system has determined that a 'post implementation review' is necessary; and ○ changes to projects or change management policies that have been initiated from a PIR. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	



<p>If this shall was implemented, what would success look like in your organisation?</p>	
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8.3 Outsourcing (5 Parts)	
8.3 Part 1 of 5	When the organisation outsources...
Note	<ul style="list-style-type: none"> • Outsourcing doesn't necessarily transfer the risk from one enterprise to another; accountability for effective asset management outcomes still reside within the outsourcing organisation. The organisation acknowledges this through its agreement processes. The agreement processes need to ensure that the risks of the: <ul style="list-style-type: none"> ○ commodity or service being outsourced; ○ the vendor itself; and ○ the transition plan from the incumbent provider to the proposed provider <p>are conducted as part of the methodology and that this risk assessment recognises that the value the commodity or service being outsourced contributes to the asset management system.</p>
Evidence Example	<ul style="list-style-type: none"> • Examples of risk assessment for outsourcing include: <ul style="list-style-type: none"> ○ an agreed strategic sourcing methodology that acknowledges risk; ○ market analysis and customer requirements assessments for specific candidate commodities and services within the asset management system including analysis of the commodities' importance to the organisation's assets and the organisation's purchasing strength; ○ risk assessments for commodities or services across the strategic sourcing lifecycle. These examples may indicate that the commodity or service being outsourced is too high a risk to outsource, pursuant to the risk management approach in shall statement 8.1, part 1; and ○ independent vendor 'financial health' assessments. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	



<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>8.3 Part 2 of 5</p>	<p>The organisation <u>shall</u> ensure...</p>
<p>Note</p>	<ul style="list-style-type: none"> • The organisation needs to ensure that there is sufficient control over processes used by suppliers to provide the adequate level of assurance for the asset management system. When commodities or services are outsourced, there needs to be an appropriate level of control over the: <ul style="list-style-type: none"> ○ outputs being provided by the vendor. There will be key performance indicators (KPIs) in the agreement between the two organisations which represent the vendor's contribution to the asset management system. These KPIs will be monitored on a regular basis by both parties. Variances from the targets will be identified and action plans will be established pursuant to shall statement 8.1, part 1; ○ competency of the vendor and its personnel to deliver the contracted services. The agreements between the organisations shall allow the contracting organisation to enforce levels of competency within the vendor and its personnel; ○ documentation used by the vendor. The vendor shall be able to demonstrate appropriate documented information is available to those within the vendor providing the commodity or service; and ○ vendors' own supply chain. An appropriate level of visibility over the vendors' supply chain will be allowed within the agreement and obtained via audits. There will be clear examples of the audits being allowed and conducted on those vendors for which this is deemed appropriate.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Examples of control over outsourced processes and activities include: <ul style="list-style-type: none"> ○ agreements with vendors that contain KPIs for which the vendor is accountable; ○ meeting minutes and reports documenting the review of the vendor's performance by both parties; ○ references to 'contracted interface dependency agreements' (CIPMs); ○ documentation of vendor's training needs analysis over the course of the contracted service delivery lifecycle; and ○ audit plans and/or audit records that confirm outsourced processes are in fact audited. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>

<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>8.3 Part 3 of 5</p>	<p>The organisation shall determine ...</p>
<p>Note</p>	<ul style="list-style-type: none"> • In addition to shall statement 8.3, part 2, processes shall exist to ensure that those people performing work within the vendor are: <ul style="list-style-type: none"> ○ competent to do so. The outsourcing the organisation’s asset management system will ensure that only those people qualified to do so are performing the tasks required within the agreement. It will define the competencies required and ensure that any newly appointed people are trained to an appropriate level and that there is an ongoing process of keeping those people within the vendor organisation current on the latest processes and procedures; ○ aware of their role in the asset management system (of the outsourcing organisation). The outsourcing organisation will ensure that the vendor’s role in the asset management system is clearly communicated to the vendor’s personnel as part of both the agreement and any contract interface procedures manual. This explanation should be explained in both qualitative terms and with reference to the agreement performance indicators; and ○ utilising the latest information in performing their duties. There will be a process for providing this to the vendor and this process will be in use; information being used by the vendor shall be agreed with or provided by the organisation and the information will still be within its ‘effective until’ period.



Evidence Example	<ul style="list-style-type: none">• Examples of how activities will be controlled and integrated include:<ul style="list-style-type: none">○ the existence of certification and competency assessment criteria for key roles;○ statements of compliance or formal confirmation of the vendor's personnel's competencies via a formal skills and competencies assessment;○ 'contracted interface procedures manuals' (CIPMs) exist and the compliance to them are enforceable within the agreements;○ 'contracted interface procedures manuals' (CIPMs) and/or agreements between the parties contain statements that position the commodities and services within the agreement in the asset management system; and○ vendor's training needs analysis reflects the requirements of the contracting organisation.• Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>8.3 Part 4 of 5</p>	<p>The organisation shall determine:</p> <ul style="list-style-type: none"> a) the processes and activities... b) the responsibilities and authorities... c) the processes and scope...
<p>Note</p>	<ul style="list-style-type: none"> • There needs to be appropriate definition and level of control over the interfaces between the organisation outsourcing and the vendor. Processes for interfacing between the two organisations will be established, agreed and documented within 'contract interface procedures manuals' (CIPM) or 'interface dependency agreements' (IDA), which, themselves, will be referred to within the legally enforceable parent agreement. There will be clear definition in terms of process steps and responsible organisations provided within these documents. <ul style="list-style-type: none"> ○ Importantly, the processes and procedures within the CIPM or IDA will be consistent with the processes and procedures within the outsourcing organisation and be obvious to anyone working within either management system, such that there is a clear transition between the process steps carried out within the contracting organisation and the contracted organisation. Conformance with these processes will be monitored and variances managed in accordance with shall statement 8.1, part 1. ○ Included in the CIPM/IDA will be processes for ensuring that information required by the contracted organisation is consistent with that in the contracting organisation. There will also be a contract and/or relationship owner appointed within both parties. This person is responsible for the ongoing management of the service delivery phase of the agreement including ensuring that vendor relationship is managed and that regular reviews of the agreement and the vendors performance are completed.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Examples of process definition and organisational responsibility allocation for outsourced commodities and services include: <ul style="list-style-type: none"> ○ those items listed in shall statement 8.3, part 3; ○ the existence of procedures manuals within the contracted and contracting organisations that contain appropriate references to support the agreements; ○ agreements containing a contract 'owner' or responsible party; ○ meeting minutes for periodic reviews of the performance of the vendor; and ○ evidence within the nonconformance reporting system of vendor nonconformance where they have existed. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>



<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>8.3 Part 5 of 5</p>	<p>When outsourcing any activities...</p> <ul style="list-style-type: none"> — the outsourced resources meet... — the performance of the....
<p>Note</p>	<ul style="list-style-type: none"> • Outsourced activities need to contribute to the overall asset management system so, in addition to shall statement 8.3, part 3, the vendor’s personnel are aware of how their activities fit into broader asset management system of the contracting organisation and have access to the relevant policies, including the asset management policy of the contracting organisations. The information the vendor’s personnel is using is approved, available to all personnel providing commodities or performing services and is managed under the same rules as the contracting organisation’s documented information management rules. • Agreements also contain measures that reflect the outputs of the agreement and the targets for these measures shall be appropriate to allow the contracting organisation to achieve its asset management objectives. The measures will be clearly defined and the adherence to these measures shall be monitored regularly by both parties.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to shall statement 8.3, part 2. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>

<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



ISO 55001 Section 9: Performance evaluation

9.1 Monitoring, measurement, analysis and evaluation (7 Parts)	
9.1 Part 1 of 7	The organisation shall determine: <ol style="list-style-type: none"> a) what needs to be... b) the methods for monitoring...
Note	<ul style="list-style-type: none"> • Refer to shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • When developing what needs to be monitored and measured, consideration should be given to both the asset management system and the asset management plans and specifically, the achievement of the asset management objectives.
Evidence Example	<ul style="list-style-type: none"> • From shall statement 6.2.1, part 1: <ul style="list-style-type: none"> ○ The strategic asset management plan clearly identifies a process for designing, implementing and reviewing asset management objectives across each and every relevant business function. ○ The strategic asset management plan should clearly document the asset management objectives and the relevant functional objectives. ○ The strategic asset management plan should show a clear link between the asset management objectives and functional objectives. • From shall statement 6.2.2, part 4: <ul style="list-style-type: none"> ○ Refer to SAMP for details of: <ol style="list-style-type: none"> 1. the processes used to identify the need for, develop the use of, and then implement and improve asset management plans; 2. the processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of asset management plans; and 3. the data item description of the required content of an asset management plan to be used by the organisation. • Refer to the following typical artefacts for the management of asset management plans: <ol style="list-style-type: none"> 1. Functional Performance Specification of the asset management system; 2. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; and 3. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system. • From shall statement 6.2.2, part 5: <ul style="list-style-type: none"> ○ Refer to SAMP for details of: <ol style="list-style-type: none"> 1. The processes used to identify the need for, develop the use of, and then implement and improve the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. 2. The processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans.



	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the management of asset management plans: <ol style="list-style-type: none"> 1. Functional Performance Specification of the: <ul style="list-style-type: none"> ▪ asset management system. 2. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the: <ul style="list-style-type: none"> ▪ asset management system. 3. Configuration Management Plan associated with the design, implementation, verification and validation of the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. • From shall statement 7.5, part 1: <ul style="list-style-type: none"> ○ Refer to the following typical artefacts for the development and implementation of supporting information needs: ○ An Information Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Financial Management Plan ○ See evidence in support of shall statements 6.2.2, parts 5 and 6, 7.1, part 1 and 7.2, part 1 ○ Or similar. • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Data Management Plan ○ Technical Information Management Plan ○ Financial Management Plan ○ See evidence in support of shall statements 6.2.2, parts 5 and 6, 7.1, part 1 and 7.2, part 1 ○ Or similar. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>9.1 Part 2 of 7</p>	<p>c) when the monitoring and...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • When developing what needs to be monitored and measured and when, consideration should be given to both the asset management system and the asset management plans and specifically, the achievement of the asset management objectives.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the evidence noted in shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • Refer to the SAMP for details. • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Quality Management Plan. • Organisational processes and procedures • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.1 Part 3 of 7</p>	<p>d) when the results from...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • When developing what needs to be monitored and measured and when, consideration should be given to both the asset management system and the asset management plans and specifically, the achievement of the asset management objectives.



<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the evidence noted in shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • Refer to the SAMP for details. • Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> ○ Information Management Plan ○ Quality Management Plan. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.1 Part 4 of 7</p>	<p>The organisation shall evaluate...</p> <ul style="list-style-type: none"> — the asset performance; — the asset management performance... — the effectiveness of the....
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statements 6.2.1, part 1, 6.2.2, parts 4 and 5, and 7.5, part 1. • When developing what needs to be monitored and measured, consideration should be given to both the asset management system and the asset management plans and specifically, the achievement of the asset management objectives. • The reporting needs for the asset portfolio and asset management system must include any legislative, statutory and regulatory reporting requirements.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • From shall statement 6.2.1, part 1: <ol style="list-style-type: none"> 1. The strategic asset management plan clearly identifies a process for designing, implementing and reviewing asset management objectives across each and every relevant business function. 2. The strategic asset management plan should clearly document the asset management objectives and the relevant functional

	<p>objectives.</p> <p>3. The strategic asset management plan should show a clear link between the asset management objectives and functional objectives.</p> <ul style="list-style-type: none"> • From shall statement 6.2.2, part 4: <ul style="list-style-type: none"> ○ Refer to SAMP for details of: <ol style="list-style-type: none"> 1. the processes used to identify the need for, develop the use of, and then implement and improve asset management plans; 2. the processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of asset management plans; and 3. the data item description of the required content of an asset management plan to be used by the organisation. • Refer to the following typical artefacts for the management of asset management plans: <ol style="list-style-type: none"> 1. Functional Performance Specification of the asset management system; 2. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; and 3. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system • From shall statement 6.2.2, part 5: <ul style="list-style-type: none"> ○ Refer to SAMP for details of: <ol style="list-style-type: none"> 1. The processes used to identify the need for, develop the use of, and then implement and improve the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. 2. The processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. • Refer to the following typical artefacts for the management of asset management plans: <ol style="list-style-type: none"> 1. Functional Performance Specification of the: <ul style="list-style-type: none"> ▪ asset management system. 2. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the: <ul style="list-style-type: none"> ▪ asset management system. 3. Configuration Management Plan associated with the design, implementation, verification and validation of the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. • Refer to shall statement 7.5, part 1. • Applicable Statutory/regulatory reports for the asset(s) and asset systems. • Or similar.
ISO Artefact	No artefact is specified



<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.1 Part 5 of 7</p>	<p>The organisation <u>shall</u> evaluate...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statements 6.2.2, part 5 and 6.2.2, part 6: <ul style="list-style-type: none"> ○ When evaluating and reporting upon the effectiveness of managing risk, referral to the: <ul style="list-style-type: none"> ▪ current approach to the management of risk is relevant as is, including: <ul style="list-style-type: none"> - reference to current collected data and information about the risks that are being realised.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the evidence for shall statement 6.2.2, part 5: <ul style="list-style-type: none"> ○ Refer to SAMP for details of: <ol style="list-style-type: none"> 1. The processes used to identify the need for, develop the use of, and then implement and improve the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. 2. The processes to be used to identify, analyse, synthesise and mitigate the risks associated with the development, operation and improvement of: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans. • Refer to the evidence for shall statement 6.2.2, part 6: <ul style="list-style-type: none"> ○ Refer to the following typical artefacts for the risk management of the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system and the development of asset management plans; 2. Risk Management Plan associated with the design, implementation, verification and validation of the asset management system and the associated asset management plans; as well as 3. Use of a formal Risk Register for the asset management system. • Or similar.

ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	
9.1 Part 6 of 7	The organisation shall retain...
Note	<ul style="list-style-type: none"> When undertaking reviews of the effectiveness of current approaches, organisations should consider the use of that information for future reviews and therefore document a management policy for that information, including its security and archival requirements.
Evidence Example	<ul style="list-style-type: none"> Refer to the following typical artefacts for the development and implementation of supporting information needs: <ul style="list-style-type: none"> Information Management Plan Data Management Plan Technical Information Management Plan Financial Management Plan See evidence in support of shall statements 6.2.2, part 5 and 6.2.2, part 6 Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	



<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.1 Part 7 of 7</p>	<p>The organisation shall ensure ...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statement 6.1, part 1. • When planning the design, implementation, operation, support and improvement (including monitoring and measurement) of the asset management system, organisations should consider: <ul style="list-style-type: none"> ○ the external and internal issues relevant to its purpose that affect its ability to achieve the intended outcome(s) of its asset management system; ○ the stakeholders that are relevant to the asset management system; ○ the requirements and expectations of these stakeholders with respect to asset management; ○ the criteria for asset management decision making; ○ the stakeholder requirements for recording financial and non-financial information relevant to asset management, and for reporting on it both internally and externally; and ○ stakeholder assurance requirements.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; and 3. relevant quality system plan and quality manual. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>

<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



9.2 Internal Audit (2 Parts)	
9.2 Part 1 of 2	<p>The organisation shall conduct...</p> <ul style="list-style-type: none"> — conforms to: <ul style="list-style-type: none"> — the organisation’s own requirements... — the requirements of this... — is effectively implemented and....
Note	<ul style="list-style-type: none"> • Refer to shall statement 6.1, part 1. • When planning the design, implementation, operation, support and improvement (including monitoring and measurement) of the asset management system (that is, the management system for the management of assets) organisations should consider: <ul style="list-style-type: none"> ○ the external and internal issues relevant to its purpose that affect its ability to achieve the intended outcome(s) of its asset management system; ○ the stakeholders that are relevant to the asset management system; ○ the requirements and expectations of these stakeholders with respect to asset management; ○ the criteria for asset management decision making; ○ the stakeholder requirements for recording financial and non-financial information relevant to asset management, and for reporting on it both internally and externally; and ○ stakeholder assurance requirements.
Evidence Example	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; 3. Annual Audit Plan(s)/Programme(s); and 4. relevant quality system plan and quality manual. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	

<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.2 Part 2 of 2</p>	<p>The organisation shall:</p> <ul style="list-style-type: none"> a) plan, establish, implement and... b) define the audit criteria... c) select auditors and conduct... d) ensure that the results... e) retain documented information as....
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statement 6.1, part 1. • When planning the design, implementation, operation, support and improvement (including monitoring and measurement) of the asset management system (that is, the management system for the management of assets) organisations should consider: <ul style="list-style-type: none"> ○ the external and internal issues relevant to its purpose that affect its ability to achieve the intended outcome(s) of its asset management system; ○ the stakeholders that are relevant to the asset management system; ○ the requirements and expectations of these stakeholders with respect to asset management; ○ the criteria for asset management decision making; ○ the stakeholder requirements for recording financial and non-financial information relevant to asset management, and for reporting on it both internally and externally; and ○ stakeholder assurance requirements.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; and 3. Annual Audit Plan(s)/Programme(s), and 4. relevant quality system plan and quality manual. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>



Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

9.3 Management review (4 Parts)	
9.3 Part 1 of 4	Top management shall review...
Note	<ul style="list-style-type: none"> • See shall statement 6.1, part 1. • When developing, implementing and reviewing its asset management system, management should consider the risks associated with the asset management system and the assurance requirements from stakeholders.
Evidence Example	<ul style="list-style-type: none"> • Refer to SAMP for details of the above and the outputs of the Board 'Risk and Review committee'. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; 3. Annual Audit Plan(s)/Programme(s); 4. relevant quality system plan and quality manual; 5. Board Risk and Review committee reports; and 6. any stakeholder issues and concerns. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



<p>9.3 Part 2 of 4</p>	<p>The management review shall...</p> <ul style="list-style-type: none"> a) the status of actions... b) changes in external and... c) information on the asset...: <ul style="list-style-type: none"> — nonconformities and corrective actions; — monitoring and measurement results; — audit results; d) asset management activity; e) opportunities for continual improvement; f) changes in the profile....
<p>Note</p>	<ul style="list-style-type: none"> • When developing, implementing and reviewing its asset management system, management should consider the risks associated with the asset management system, current issues, outcomes from previous reviews and the assurance requirements from stakeholders.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; 3. Annual Audit Plan(s)/Programme(s), including previous audit findings, required actions and corresponding organisational responses; 4. relevant quality system plan and quality manual; 5. Board Risk and Review committee reports; and 6. any stakeholder issues and concerns. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	

<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.3 Part 3 of 4</p>	<p>The outputs of the...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statements 8.2, parts 1, 2 and 3. • When developing, implementing and reviewing its asset management system, management should consider the risks associated with the asset management system, current issues, outcomes from previous reviews and the assurance requirements from stakeholders. The outcomes of the review should include changes to the asset management system.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; 2. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; 3. Annual Audit Plan(s)/Programme(s), including previous audit findings, required actions and corresponding organisational responses; 4. relevant quality system plan and quality manual; 5. Board Risk and Review committee reports; and 6. any stakeholder issues and concerns. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	



<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>9.3 Part 4 of 4</p>	<p>The organisation shall retain...</p>
<p>Note</p>	<ul style="list-style-type: none"> When developing, implementing and reviewing its asset management system, management would consider the risks associated with the asset management system, current issues, outcomes from previous reviews and the assurance requirements from stakeholders. The outcomes of the review should be documented.
<p>Evidence Example</p>	<ul style="list-style-type: none"> Refer to SAMP for details of the above. Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system; Annual Audit Plan(s)/Programme(s), including previous audit findings, required actions and corresponding organisational responses; relevant quality system plan and quality manual; Board Risk and Review committee reports; and any stakeholder issues and concerns. Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	

ISO 55001 Section 10: Improvement



10.1 Nonconformity and corrective action (3 Parts)	
10.1 Part 1 of 3	<p>When a nonconformity or...</p> <ul style="list-style-type: none"> a) react to the nonconformity... <ul style="list-style-type: none"> — take action to control... — deal with the consequences; b) evaluate the need for...: <ul style="list-style-type: none"> — reviewing the nonconformity or... — determining the causes of... — determining if similar nonconformities... c) implement any action needed; d) review the effectiveness of... e) make changes (see 8.2) to...
Note	<ul style="list-style-type: none"> • When dealing with any nonconformity, organisations should develop approaches and processes to identify, respond, control and mitigate and review nonconformance, including any analysis needed to identify any need for change. • As a result, organisations must have established and practiced processes in place to deal with nonconformity, including with assets, with asset management and with the asset management system.
Evidence Example	<ul style="list-style-type: none"> • Evidence for such requirements includes: <ol style="list-style-type: none"> 1. results, if any, of incidents/accidents to do with the use of assets - refer to the strategic asset management plan and asset management plans for further details; 2. results of reviews (both internal and external) to the processes used within the asset management system - refer to the strategic asset management plan for further details; and 3. results of reviews to asset management within the organisation. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

<p>10.1 Part 2 of 3</p>	<p>Corrective actions shall be...</p>
<p>Note</p>	<ul style="list-style-type: none"> • When dealing with any nonconformity, organisations should develop approaches and processes to identify, respond, control and mitigate and review nonconformance, including any analysis needed to identify any need for change. • As a result, organisations must have established and practiced processes in place to deal with nonconformity including with assets, with asset management and with the asset management system. • Those processes and plans and the associated corrective actions needed, should reflect the risks associated with those nonconformities. • Normally, the analysis of such risks is conducted as part of the development of asset management plans and the development of the asset management system. • Where necessary, low probability/high consequence events are considered as part of business and contingency planning.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Evidence for such requirements includes: <ol style="list-style-type: none"> 1. results, if any, of incidents/accidents to do with the use of assets - refer to the strategic asset management plan and asset management plans for further details; 2. results of reviews (both internal and external) to the processes used within the asset management system - refer to the strategic asset management plan for further details; and 3. results of reviews to asset management within the organisation. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	



<p>10.1 Part 3 of 3</p>	<p>The organisation shall retain...</p> <ul style="list-style-type: none"> — the nature of the... — the results of any....
<p>Note</p>	<ul style="list-style-type: none"> • When dealing with any nonconformity, organisations should develop approaches and processes to identify, respond, control and mitigate and review nonconformance, including any analysis needed to identify any need for change. • As a result, organisations must have established and practiced processes in place to deal with nonconformity including with assets, with asset management and with the asset management system. • Those processes and plans and the associated corrective actions needed, should reflect the risks associated with those nonconformities. • Normally, the analysis of such risks is conducted and documented as part of the development of asset management plans and the development of the asset management system. • Where necessary, low probability/high consequence events are considered and documented as part of business and contingency planning.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Evidence for such requirements includes: <ol style="list-style-type: none"> 1. results, if any, of incidents/accidents to do with the use of assets - refer to the strategic asset management plan and asset management plans for further details; 2. results of reviews (both internal and external) to the processes used within the asset management system - refer to the strategic asset management plan for further details; and 3. results of reviews to asset management within the organisation. • Or similar.
<p>ISO Artefact</p>	<p>No artefact is specified</p>
<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	

10.2 Preventive action (2 Parts)	
10.2 Part 1 of 2	The organisation shall establish...
Note	<ul style="list-style-type: none"> • Refer to shall statement 6.2.2, part 6. • When planning the design, implementation, operation, support and improvement of asset management objectives, organisations should consider the design, implementation, operation and improvement of an asset management system that: <ul style="list-style-type: none"> ○ uses technical, financial and interface risk based decision making processes for the design, implementation, operation, support and improvement of the: <ul style="list-style-type: none"> ▪ asset management system; and ▪ asset management plans; and ○ uses the agreed decision making criteria. • Such technical, financial and interface risk based processes may include: <ul style="list-style-type: none"> ○ Reliability/availability analysis; ○ maintainability and supportability analyses; ○ failure mode effect (and criticality) analyses; ○ reliability centred maintenance or risk based maintenance analyses; ○ return on investment analyses and level of repair analysis; and ○ safety case/argument analyses and job safety analyses.
Evidence Example	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the risk management of the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system and the development of asset management plans; 2. Risk Management Plan associated with the design, implementation, verification and validation of the asset management system and the associated asset management plans; as well as 3. Relevant Contingency Plans; 4. Outputs of the organisation's technical, financial and interface risk based processes; and 5. the use of a formal Risk Register for the asset management system. • Or similar.
ISO Artefact	No artefact is specified



<p>Your Organisation Artefacts</p>	
<p>If this shall was implemented, what would success look like in your organisation?</p>	
<p>10.2 Part 2 of 2</p>	<p>When a potential failure...</p>
<p>Note</p>	<ul style="list-style-type: none"> • Refer to shall statement 6.2.2, part 6. • When planning the design, implementation, operation, support and improvement of asset management objectives, organisations should consider the design, implementation, operation and improvement of an asset management system that: <ul style="list-style-type: none"> ○ uses technical, financial and interface risk based decision making processes for the design, implementation, operation, support and improvement of the: <ul style="list-style-type: none"> ▪ asset management system; ▪ asset management plans; and ○ uses the agreed decision making criteria. • Such technical, financial and interface risk based processes may include: <ul style="list-style-type: none"> ○ reliability/ availability analysis; ○ maintainability and supportability analyses; ○ failure mode effect (and criticality) analyses; ○ reliability centred maintenance or risk based maintenance analyses; ○ return on investment analyses and level of repair analysis; and ○ safety case/argument analyses and job safety analyses.
<p>Evidence Example</p>	<ul style="list-style-type: none"> • Refer to the following typical artefacts for the risk management of the asset management system: <ol style="list-style-type: none"> 1. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system and the development of asset management plans; 2. Risk Management Plan associated with the design, implementation, verification and validation of the asset management system and the associated asset management plans; as well as 3. Relevant Contingency Plans;

	<ol style="list-style-type: none"> 4. Outputs of the organisation’s technical, financial and interface risk based processes; and 5. the use of a formal Risk Register for the asset management system. <ul style="list-style-type: none"> • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	



10.3 Continual improvement (1 Part)	
10.3 Part 1 of 1	The organisation shall continually...
Note	<ul style="list-style-type: none"> • Refer to shall statements 6.2.2, part 2, 6.2.2, parts 5 and 6. • Organisations should design, implement, operate, support and improve processes, plans and activities that support the achievement asset management objectives. • When planning the design, implementation, operation, support and improvement of asset management objectives, organisations should consider the design, implementation, operation and improvement of an asset management system.
Evidence Example	<ul style="list-style-type: none"> • Refer to SAMP for details of the above. • Refer to the following typical artefacts for the asset management system: <ol style="list-style-type: none"> 1. Stakeholder Analyses; 2. Functional Performance Specification of the asset management system; 3. Systems Engineering Management Plan for the engineering management of the design, implementation and improvement of the asset management system; and 4. Configuration Management Plan associated with the design, implementation, verification and validation of the asset management system. • Or similar.
ISO Artefact	No artefact is specified
Your Organisation Artefacts	
If this shall was implemented, what would success look like in your organisation?	

Annex A

ISO 55001 Required Artefacts

The following artefacts are required by ISO 55001:

- An Asset Management Policy
- A Strategic Asset Management Plan
- An Asset Management Plan

Asset Management Policy

The asset management policy is a short statement that sets out the principles by which the organisation intends to apply asset management to achieve its organisational objectives.

The policy should set out the organisation's commitments and expectations for decisions, activities and behaviour concerning asset management. It should be aligned to and demonstrate support for the organisational objectives. For example, an organisational objective to reduce capital investment could result in an asset management policy statement for adopting risk-based approaches to capital investment.

The typical content of an asset management policy may include the:

- guiding principles for asset management activities;
- applicable laws, legislation and regulations;
- resources to deliver on asset management objectives and the structure of the organisation;
- decision-making criteria to be used;
- evaluation of alternatives that take into account life cycle costs, benefits and risks of the asset;
- reporting on asset and asset management performance;
- long-term objectives, sustainable outcomes and stakeholder requirements; and
- continual improvement of the asset management system.

Strategic Asset Management Plan

The typical content of this artefact may include:

- 1 INTRODUCTION
 - 1.1 Document Context
 - 1.2 Document Purpose
 - 1.3 Document Scope
- 2 STRATEGIC ASSET MANAGEMENT PLAN DEVELOPMENT
 - 2.1 Overview
 - 2.2 Relationship to Asset Management Policy
 - 2.3 Stakeholder Management Approach
 - 2.4 Asset Management Objectives Development
 - 2.4.1 Relationship to Organisational Objectives
 - 2.4.2 Relationship to Other Functional Objectives
 - 2.5 Internal Factor Identification
 - 2.6 External Factor Identification
 - 2.7 Asset Management System Scope Development
 - 2.8 Asset Management Plan Approach
 - 2.8.1 Relationship to Asset Management Policy



- 2.8.2 Relationship to Stakeholders
- 2.8.3 Relationship to External Factors
- 2.8.4 Relationship to Internal Factors
- 2.8.5 Development Processes for Asset Management Plans
 - Technical Basis
 - Risk Basis
 - Financial Basis
 - Performance Basis
- 3 ORGANISATION OVERVIEW
 - 3.1 Overview
 - 3.2 Organisational Function (Purpose)
 - 3.3 Stakeholders
 - 3.4 External Factors
 - 3.5 Internal Factors
- 4 OBJECTIVES
 - 4.1 Overview
 - 4.2 Setting Asset Management Objectives
 - 4.3 Communication of Asset Management Objectives
 - 4.4 Monitoring of Asset Management Objectives
 - 4.5 Data and Information Requirements
- 5 SCOPE OF THE ASSET MANAGEMENT SYSTEM
 - 5.1 Overview
 - 5.2 Criteria
 - 5.3 Assets within Scope
 - 5.4 Systems Engineering Management Plan for Asset Management System
 - 5.5 Requirements of the Asset Management System (Functional Requirements/Specification)
 - 5.6 Description of the Asset Management System
 - 5.7 Change Management (Configuration Management)
 - 5.8 Resource Requirements
 - 5.9 Data and Information Requirements
 - 5.10 Risk Assessment
- 6 INTEGRATION OF ASSET MANAGEMENT AND OTHER BUSINESS FUNCTIONS
 - 6.1 Overview
 - 6.2 Boundaries with other Functional Areas
 - 6.3 Objectives of Other Functional Areas
 - 6.4 Relationship to Other Functional Objectives
 - 6.5 Traceability Matrix
- 7 DECISION MAKING AND RISK MANAGEMENT
 - 7.1 Decision Making Approach
 - 7.2 Decision Making Criteria
 - 7.3 Asset Management Risk Management Approach
 - 7.4 Integration with Corporate Risk Approach

- 8 LEADERSHIP AND COMMITMENT
 - 8.1 Overview
 - 8.2 Role of Leadership in Asset Management
 - 8.3 Policy
 - 8.3.1 Overview
 - 8.3.2 Relationship to Organisational Objectives
 - 8.3.3 Relationship with Asset Management Objectives
 - 8.4 Communications Plans
- 9 ORGANISATIONAL ROLES
 - 9.1 Overview
 - 9.2 Roles, Responsibilities, Authorities and Accountabilities
 - 9.3 Roles to Establish the Asset Management System
 - 9.4 Roles to Update the Asset Management System
 - 9.5 Roles to Develop Asset Management Plans
 - 9.6 Internal Review Roles
 - 9.7 Management Review Roles
- 10 ASSET MANAGEMENT PROCESSES
 - 10.1 Overview
 - 10.2 Asset Management Plans
 - 10.2.1 Implementation Processes for Asset Management Plans
 - 10.2.2 Application Processes for Asset Management Plans
 - 10.2.3 Monitoring Processes for Asset Management Plans
 - 10.2.4 Review Schedule for Asset Management Plans
 - 10.2.5 Data and Information Requirements
- 11 PERFORMANCE EVALUATION AND IMPROVEMENT
 - 11.1 Monitoring of the Asset Management System
 - 11.2 Audit Requirements

APPENDICES

SWOT ANALYSIS

Internal issues

RISK ASSESSMENT

Asset Management System Risks

Asset Management Plan

The Asset Management Plan (AMP) describes the operating context, governance, scope and range of activities intended to achieve the agreed organisational objectives.

The plan describes the strategies, plans and activities necessary to the identification, management and control of an agreed budget to achieve the lowest life cycle cost. The plan demonstrates a transparent match to the context of the Services to be delivered, and the nominated asset management and related discipline standards.

The AMP describes the continuous improvement and compliance and review activities to be performed.

The typical content of an AMP may include:

- 1. SCOPE
 - 1.1 Introduction



Describes the role of an asset management plan in the long term management of the defined system of assets encompassed by the plan along with the live nature of the plan as a continuously changing document.

1.2 Assets not in scope of this plan

Lists those assets that may relate to the performance of the asset but are not included within this plan.

1.3 Timeframe

Defines the agreed timeframe for the plan i.e. 20 years. This section may include a statement as to the expected accuracy of the plan at varying time horizons, e.g. the plan may provide a ten year budgetary bid with indicative estimates.

2. DEFINITIONS

Provides a list of common terms used throughout the plan. Wherever possible such definitions should be drawn from the listed guideline standards and handbooks and have a reference to those sources.

3. BUSINESS DRIVERS

3.1 Governance Structure

Describes the governance arrangements established to assure a sustainable capability. It should typically address the following characteristics: compliance with statutory imperatives, transparency regarding decision making, responsiveness to stakeholders, accountability and encourages leadership and strategic vision.

3.2 Statutory Requirements

Lists those acts of government and organisational requirements that directly impact AMP activity. This might typically include various safety and environmental acts.

3.3 Regulatory Requirements

Lists those regulations both internal and external that impact the asset management functions.

3.4 Australian/International Standards Requirements

Lists those national and international standards and handbooks that will be the source of asset management guidance and direction.

4. IDENTIFICATION OF ASSETS

4.1 Asset Systems

Describes the set of interconnected assets necessary to achieve a desired function and subject to the plan. Asset systems might include other assets that have a managed interface or are essential to the delivery of the prime asset function.

4.2 Asset Types and Populations

Listing asset types provides a means of applying consistent strategies and processes to a group of nominally similar assets and enables large numbers of like assets to be managed in a consistent manner. Their populations provide an indication of the likely importance of such classification and potential return on the management investment necessary.

4.3 Asset Age Profiles

Lists the asset types and their associated age profile to assist management decision making. This may become increasingly important as the asset systems age including the potential impact of pooling rotables.

5. MANAGEMENT RESPONSIBILITY AND INTERFACES

5.1 Organisation Structure

Details the organisational structure and key positions in each operating entity in the organisation, their authority relationships and the high level relationships.

5.2 Key Roles and Responsibilities

Details the roles and responsibilities of all positions in terms of their functions, responsibilities accountabilities and authorities and their linkage to described asset management processes.

5.3 Interface and Relationships

Describes the internal and external interfaces, and related parties, as they relate to the delivery of asset management processes.

6. ASSET CONDITION AND TECHNOLOGY ISSUES

6.1 Condition Issues

Details those assessed asset Conditions (i.e. the material state) that indicate adverse potential risk to the achievement of the asset system or types required performance. Condition is defined as “the state of something, especially with regard to its appearance, quality, or working order”.

6.2 Technology Issues

Details the likely threats inherent in existing applied technologies (i.e. obsolescence) and the opportunities available in alternate or additional technologies. Technology in this context is defined as “the application of practical sciences to industry or commerce”.

6.3 Asset and Service Risks

Details the likely weaknesses or threats inherent in existing asset systems and types along with their potential adverse risks associated with the achievement of service delivery of agreed requirements.

6.4 Asset Integrity

Integrates any existing condition or technology issues along with service risks into an assessment of the asset (technical) integrity.

6.5 Asset Integrity Reporting Requirements

Describes the reporting arrangements for asset integrity.

7. OPERATING EXPENDITURE REQUIREMENTS

7.1 Determination of Maintenance Requirements

Describes the processes for determining the annual quantum of maintenance, including Preventive Maintenance (condition monitoring, hard time and failure finding), Corrective Maintenance (repairs and renewals) along with the volume of expected activity on each Asset System by type of activity.

7.2 Maintenance Plan Resource Requirements

Translates the volume of maintenance activity and their individual or probabilistic support needs at the asset (functional) system level by asset types into a resourcing plan covering all integrated support needs and their related procurement strategies and capabilities.

7.3 Projected Maintenance Expenditure

Provides a budget with variations subject to a defined change management process. Implements a budgetary structure assuring linkage between system functions and costs down to a level necessary to achieve an understanding of cost of ownership of each functional system, to allow comparison to achieved value. Structure of the expenditure program should support compliance with relevant Australian Accounting Standards (AAS) and achieve transparency for both fiscal performance and material preparedness.

8. CAPITAL EXPENDITURE REQUIREMENTS FOR NEW OR MODIFIED ASSETS

8.1 Capital Requirements – New/Modified Assets

Describes the funding requirements of approved capital programs over a defined rolling period.

8.2 Capital Requirements – Asset Replacements

Describes the funding requirements of approved asset replacement programs over a three year rolling period. This program may replace the renewals program described at 7.1 subject to accounting treatment under AAS.

8.3 Asset Disposal Plans

Describes the funding requirements of approved asset disposal programs over a rolling period.

9. ASSET REPORTING REQUIREMENTS TO MEET PLAN

9.1 Asset Performance Criteria

Describes or provides cross reference to the required asset performance criteria at each level of asset system indenture necessary to assure sustained achievement of service delivery of agreed requirements.



9.2 KRA and KPI Reporting

Describes the reporting of agreed Key Responsibility Areas (KRAs), KPIs and subsidiary PIs necessary to the governance of the program.

9.3 Asset risk and financial reporting

Describes the reporting of agreed risk criteria and financial reporting necessary to the fiduciary responsibilities, the assessment of value for money and the conduct of continual improvement programs.

10 ASSET ASSURANCE REQUIREMENTS

10.1 Management Board - Risk and Asset Management Sub-Committee Responsibilities

Describes the governance arrangements necessary to the top down leadership of asset management and related risk management functions of the Board to assure an asset management culture, focus on core capabilities and their sustainability.

10.2 AM Processes and Competencies

Describes the suite of applied asset management processes through a traceability matrix connecting asset management policy to strategy, to objectives and plans, and to their supporting processes (including reference to sources of subsidiary activities and tasks) and competencies. It is expected that process maturity and competence coverage will be key reporting criteria.

10.3 AM Information and Data

Describes the asset management process related information and supporting data necessary to implement the defined AM processes in a quality manner for compliance assessment and process improvement purposes. This should include the linkage to Asset Management Systems intended to collect, transfer, store, aggregate and enable the listed decision making processes.

10.4 Benchmarking

Describes the internal and external benchmarking arrangements and associated with the development of improvement programs and assessment of process capability and maturity. Programs and their intent are to be described. Linkages with other measurement and improvement functions should be described.

10.5 Review and Audit Program Needs

Describes the governance arrangements necessary to the top down leadership of asset management and related risk management functions of the Board to assure focus on core capabilities and their sustainability.

11 ASSET PLAN APPROVAL

11.1 Approval processes and Recording Requirements

Describes the assessment and approval process for the AMP including identification of all independent SME assessors and the assessment methodology for each element of the plan in particular the budgetary drivers. This section describes the process, and its related recording requirements.

11.2 Competency Requirements

Describes the competence requirements of all independent assessors and approval authorities necessary to the production of the budget.

11.3 Allocated Responsibilities

The section describes the responsibilities and accountabilities for recording and sign off of all assessments leading to financial approval of the budgetary submission.

Annex B

ISO 55001 Typical Artefacts

The following typical artefacts may be required to support ISO 55001, namely:

Systems Engineering Management Plan (SEMP)

Reference: ANSI/EIA 632: 1998 Processes for Engineering a System

1. INTRODUCTION

The Systems Engineering Management Plan (SEMP) describes the plans and procedures to manage and integrate all engineering activities in accordance with the Contract, including development, review, production and Speciality Engineering.

The SEMP provides the primary direction and guidance to the engineering and technical team responsible for conduct of the scope of work. The SEMP is used as a benchmark against which the organisational engineering performance can be evaluated and also to assess any changes in risk as the project progresses.

2. INTER-RELATIONSHIPS

The SEMP shall be consistent with other related plans such as Support Plans and Risk Management Plans.

The SEMP is often the single planning and controlling document for all SE program activities and related efforts, and shall have authority over, and give direction to, any subordinate SE sub-program plans.

3. PREPARATION INSTRUCTIONS

3.1 Plan Summary

The SEMP shall define its relationship to other planning documents, including any subordinate engineering plans.

3.2 Engineering Management

The SEMP shall:

- describe how technical effort will be coordinated to meet cost, schedule, and performance objectives;
- define the engineering organisation, including key engineering positions, and identify the partitioning of engineering effort between the various organisations; and
- identify the standards (e.g., EIA-632 and ISO 12207) to be utilised when conducting SE and related, Configuration Management (CM) and Verification and Validation (V&V) activities, including any proposed tailoring of standards.

3.3 Systems Engineering Process

The SEMP shall define the application (tailored or otherwise) of an organisation's SE processes, including:

- major products and outcomes;
- any major SE tools that will be used on the Contract;
- method of documentation for engineering and technical information, including expected specifications and configuration baselines, and how it will be controlled;
- methods and any tools for analysis and validation of system requirements;
- required implementation tasks, including the integration and assembly of products; and
- approach, methods, procedures and tools to be used for systems analysis and control, including establishing and maintaining requirements traceability.

3.4 Specialty Engineering

The SEMP shall describe the Contractor's proposed programs for specialty disciplines, such as:

- Reliability, Maintainability, and Supportability
- Reliability Growth
- Electromagnetic Environmental Effects



- Human Factors
- Safety
- Security
- Integrated Support.

3.5 Software Development and Management

The SEMP shall define the tailored application of the Contractor's software processes to the activities of the Contract, including:

- management of software development activities being undertaken by Subcontractors;
- development of software being undertaken by the Contractor;
- software life cycle management activities; and
- software assurance activities depending on the criticality of the software.

3.6 System Reviews and Audits

The SEMP shall define the approach planned to establish and conduct System Reviews and Internal System Reviews. The objectives for each System Review, and the relationship to other engineering program activities, shall be clearly defined.

Based on the requirements for System Reviews, and the organisation's internal processes (tailored as necessary) the SEMP shall detail the following information for each of the System Reviews:

- proposed review venue;
- pre-requisites for the conduct of the review (entry criteria);
- design documentation to be reviewed;
- review objectives, including essential review completion criteria (exit criteria); and
- details of the organisation(s) and individuals involved in the review and their specific review responsibilities.

Configuration Management Plan

Reference: AS/ISO 10007:2003 Quality management systems – Configuration management

1 GENERAL

A configuration management plan should be structured to allow for discrete sections addressing the topics given in Sections 2 to 7, which also give guidance on content.

2 INTRODUCTION

A configuration management plan will need to include an introductory section giving general information. The following topics are typically addressed in such a section:

- purpose and scope of the configuration management plan;
- description of the product and configuration item(s) to which the plan applies;
- schedule to provide guidance on the time-scale of important configuration management activities;
- description of configuration management tools (e.g. information technology);
- related documents (e.g. configuration management plans from suppliers);
- listing of relevant documents and their interrelationships.

3 POLICIES

The configuration management plan should detail the configuration management policies that have been agreed with the customer or suppliers. This should provide the basis for configuration management activities within the contract, such as:

- policies on the practice of configuration management and related management activities;
- the organisation, responsibilities and authorities of relevant interested parties;

- qualification and training requirements;
- the criteria for the selection of configuration items; and
- the frequency, distribution and control of reports, both internally and to the customer, and terminology.

4 CONFIGURATION IDENTIFICATION

The configuration management plan should detail:

- family tree of configuration items, specifications and other documents;
- numbering conventions to be adopted for specifications, drawings, concessions and changes;
- method for identification of the revision status;
- configuration baselines to be established, schedules, and the type of product configuration information to be included;
- the use and allocation of serial numbers or other traceability identification; and
- release procedures for product configuration information.

5 CHANGE CONTROL

The configuration management plan should detail:

- the relationship of the Configuration Control Board of the organisation with that of other interested parties;
- the procedures for the control of changes prior to the establishment of a contractual configuration baseline; and
- the methods for processing changes (including those for customer, or supplier initiated changes) and concessions.

6 CONFIGURATION STATUS ACCOUNTING

The configuration management plan should detail:

- the methods for collecting, recording, processing and maintaining the data that are necessary for producing configuration status accounting records; and
- the definition of the content and format for all configuration status accounting reports.

7 CONFIGURATION AUDIT

The configuration management plan should detail a list of audits to be conducted, and their occurrence within project schedules, the configuration audit procedures to be used, the authorities of relevant interested parties (both within and outside the organisation), and a definition of the format for audit reports.

Risk Management Plan

Reference: ISO 31000:2009 Risk management – Principles and guidelines

ISO 31010: 2009 Risk management – Risk assessment techniques

1. INTRODUCTION

Describes the purpose of the plan, the audience for the plan and how the risk management plan shall link to activities that the plan supports.

2. ORGANISATIONAL CONTEXT

The organisational context shall cover both internal and external environments and in particular a list of stakeholders and their needs and expectations. In particular the key risk criteria and the organisation's risk appetite shall be defined.

3. RISK STRATEGY

The risk model to be applied shall be described as defined in ISO 31000. In particular the risk assessment methods and potential mitigation processes shall be selected.

4. RISK IDENTIFICATION



A list of potential risks to the achievement of organisational objectives shall be established in line with the agreed risk criteria defined in the risk strategy.

5. RISK SCORING

Risk shall be assessed and scored in accordance with the defined strategy using either qualitative, semi quantitative and quantitative methods as necessary.

6. RISK MANAGEMENT REGISTER

Based on the outcomes of the risk assessment, a set of "key risks" shall be identified and included in the risk register for subsequent tracking.

7. RISK TREATMENT

Risk mitigation plans shall be developed for risks assessed as unacceptable in relation to the defined risk appetite.

8. RISK MANAGEMENT PLAN ADMINISTRATION

The administrative process for conducting risk reviews and developing associated plans such as stakeholder communication and consultation plan, risk audit and review plan, risk mitigation plan etc. shall be defined. Required authorities and responsibilities to conduct plans shall be allocated.

Annex C

Asset Management Process Reference Model Capability Delivery Model

The Capability Delivery Model schematically presents processes that may be used in part or entirety, to deliver the stated outputs of an organisation. As the name states it is a delivery model and as such shows at a high level how the parts of an organisation work together to deliver outcomes.

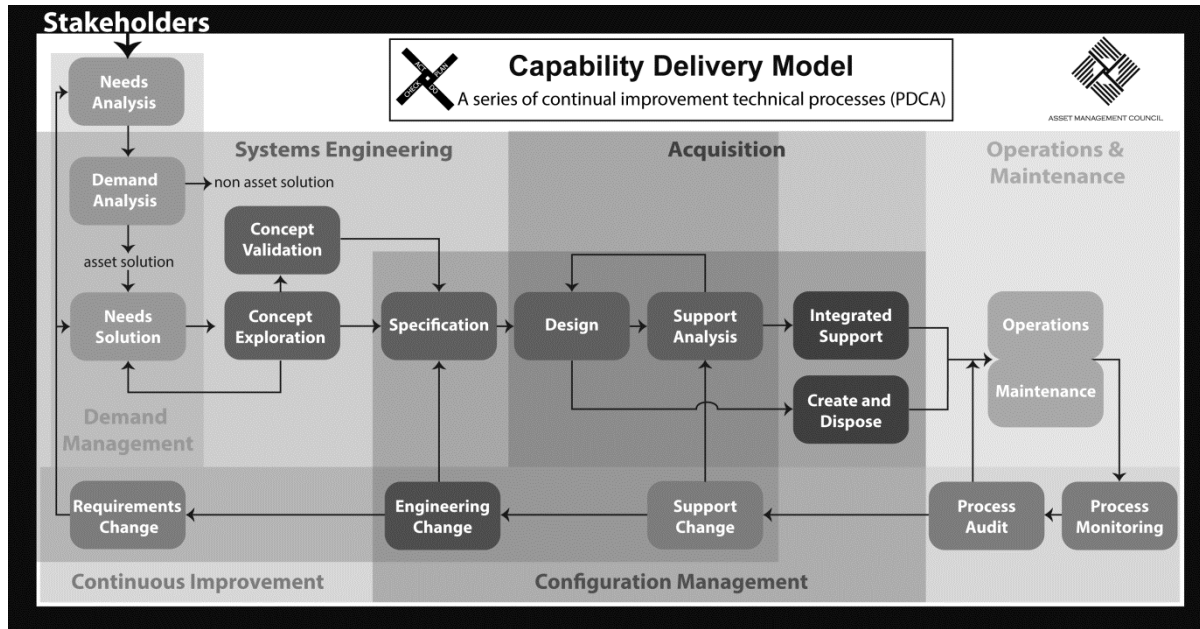


Figure A.1: Capability Delivery Model – An Asset Management Process Reference Model

The processes are shown in six main disciplines:

- Demand Management
- Systems Engineering
- Configuration Management
- Acquisitions
- Operations and Maintenance
- Continuous Improvement

These disciplines are associated with a number of national and international Standards, such as ISO/IEC 15288 Systems Engineering.

Each of these disciplines have a number of enabling capability elements and sub-elements, which in turn may have a number of competency sets and supporting units of competency. These disciplines and enabling capability elements are discussed in further detail below.

Demand Management

Arguably, the most critical aspect of asset management is the establishment of agreements with stakeholders necessary to satisfy needs and demands. These agreements are for either the supply of outcomes or the acquisition of resources necessary to achieve supply.

The demand management function is generally a key plank in the management of:

- production – is supply not meeting demand? There are many options to solve this: build a newer production line; get more out of the existing line; increase prices; use another production plant that has spare capacity;
- critical utilities assets for industries such as energy, water, and transport where demands peak and must be damped; and

- social agency assets for industries such as health, education, law, etc. where demand for services may not be bounded by financial market forces.

The demand management function balances the assessed demand with provided services matched to optimal asset configurations.

Managing demand requires clarity about the type and quantification of needs that are being managed. A comprehensive list of stakeholders and their needs is essential to this task.

Systems Engineering

Systems engineering is a well-documented and standardised process and can be defined as an interdisciplinary engineering management process to evolve and verify an integrated, life cycle balanced set of system solutions that satisfy stakeholder needs.

A simpler definition would be “the translation of a set of stakeholder requirements into a balanced and verified solution”.

The verification process is carried out to ensure that the output of the design stage (or stages) meets the design stage input requirements. The solution is verified by checking that system specification requirements, which are measurable and hence testable, are achieved layer by layer as you flow down performance requirements into sub systems, equipment and components.

Design validation is the process of ensuring that the final product conforms to defined user (stakeholder) needs and/or requirements. The Systems Engineering “V” Process is shown in the following diagram.

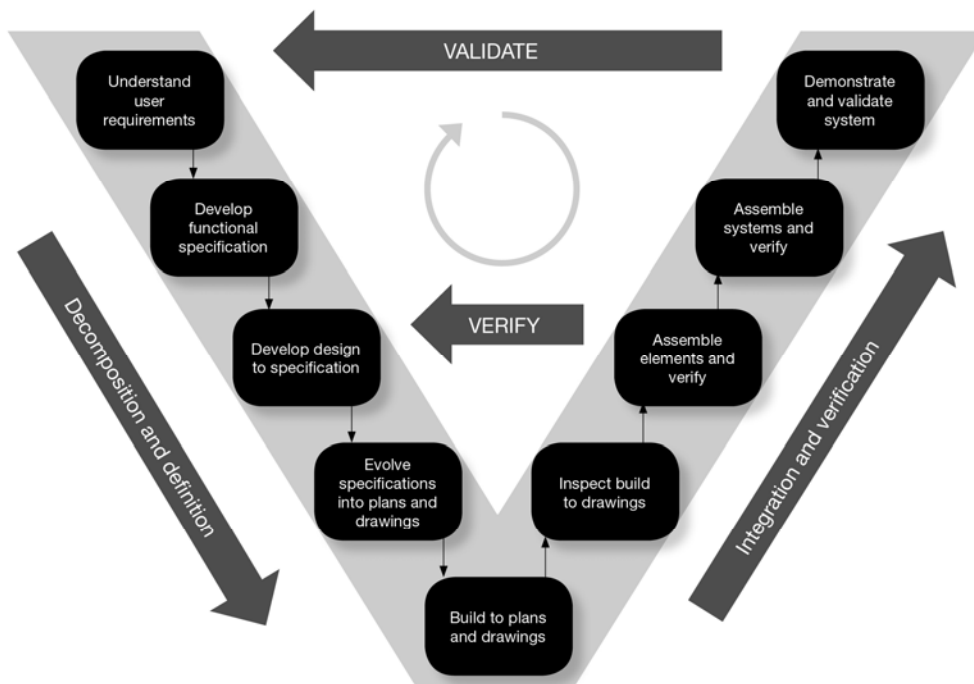


Figure A.2: Systems Engineering “V” Process

The solution achieves balance by using lowest life cycle cost as a balance between what is paid today (design and manufacture or sometimes called capital expenditure or CAPEX) against what is paid tomorrow (maintenance and operation, sometimes called operating expenditure or OPEX).

Engineering is at the very core of the Capability Delivery Model. It is a connecting tissue linking stakeholder needs at the front end of the model to all the asset related expenditure required to assure agreed service capabilities. It can be argued that all the finances of an asset dependent organisation go either directly into the conduct of asset acquisition/dispose, operations and maintenance or to the enabling functions that support those tasks.

Configuration Management

Configuration Management (CM) is the management of the functional and physical attributes of a system, an asset and its component sub-systems and assemblies. It also includes the derived information representing the integrated support needs.

CM is a poorly understood and applied discipline in most organisations, including many regarded as good managers of assets. Certainly all have some fundamental knowledge of establishing asset registers and processes

for change control and of drawing numbering and version control. However, these disconnected capabilities do not achieve the core intent of good CM practices. They do not formally manage the changing functional and physical configurations of their asset systems along with the derived information necessary to sustain the asset capability, both short and long term.

CM is the guardian at the entry to the acquisition process. This role recognises that if the functional requirements for a system change, it is likely that the design, and subsequently the support requirements, will also change. CM change control provides a formal test check that identifies the implications and answers the questions:

- Do I still want to make this change?
- Is it a worthwhile thing to do?

Acquisition

The acquisition discipline includes procurement of assets against an agreed specification and the identification of those assets no longer needed. The acquisition process is aimed at acquiring the requisite capability and therefore must include all the supporting and enabling capabilities necessary to achieve the outputs for the required time and to the standard required.

Just how an organisation acquires additional and/or varied capabilities may be through a variety of processes, including the basic buy or lease as well as increasingly sophisticated financial management mechanisms such as Public Private Partnerships (PPP) and Build Own Operate Transfer (BOOT) etc. 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.

This integrated approach is intended to assure that necessary support is available on the first day of service so that on the second day that you own the asset and there is a failure, you have the spare, you have the people, you have the facilities and you have the tools to remedy the situation. You have the support necessary 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, manuals and training and will certainly need people, etc.

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.

Operations and Maintenance

Operations and maintenance is by far the most enduring stage of the asset life cycle. It begins as soon as an asset is accepted and entered into service and ends with the decision to dispose of the asset. This stage generally consumes the largest portion of the cost of asset ownership. In the case of an asset such as rolling stock, the costs of this stage may exceed initial procurement costs many times over when taking the operation of the asset into account.

The focus in the operations and maintenance stage is on the use of assets to provide a defined service and on their maintenance and support to ensure a continuing capability to meet those requirements with respect to service provision, safety and reliability. Preservation of equipment at a standard that meets statutory responsibilities under the various acts and regulations of government is a primary goal, requiring continuous and meticulous attention to the support planning and management of maintenance and engineering tasks.

Continuous Improvement

Continuous improvement is a process to assess, identify and resolve gaps in the application of the intended integrated support through assurance that defined processes are properly and effectively followed.

We have now reached a point in the model where we have identified our stakeholders, polled their needs; translated those business needs into a specification and established a design solution. We have also established a support solution and are using it fully in operations and maintenance.

Did we get it right? Probably not.

Many assumptions about the support environment, or the expected reliability and maintainability performance of the selected equipment, were made during the design process. Some were accurate, being drawn from existing equipment use, others less so. Additionally, the world might have changed between the establishment of the initial requirement and the delivery of the assets.



It is actual asset usage that gives us information to verify the entire integrated support package that informs the operations and maintenance staff.

Business Management

This element of the Capability Delivery Model represents those other non-asset specific business activities, processes and competencies needed to deliver assets that achieve the stated outputs of the enterprise. These activities include:

- Risk Management
- Information Management
- Human Resources
- Quality, Environmental and Project Management
- External relationships
- Legal and OH&S
- Financial Management.

Competent and effective business management, across each stage of the Capability Delivery Model, is required if the organisation is to be a leader in asset management.

Culture and Leadership

Culture and leadership are the elements that establish and sustain the processes within the Capability Delivery Model.

Culture can be defined as “where individuals can re-interpret their world and their relationship to it”. A true learning culture continuously challenges its own methods and ways of doing things. Some of the facets of culture include:

- Create the “long view”;
- Risk based approaches;
- Confident to question;
- Competence through training and application;
- Open to failure (i.e. say what went wrong);
- Rewards based on measured performance;
- Know roles and responsibilities; and
- Accept and understand causes of human error.

Leadership is “the process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task.” Some of the facets of leadership include:

- Promote asset management as essential to the business;
- Establish clear vision and policies;
- Motivate staff to be quality providers;
- Regularly monitor and review asset management performance;
- Communicate and consult with asset management teams;
- Recognise the existence of and manage human error; and
- Drive and support change.

A learning culture and effective leadership are key characteristics of organisations which demonstrate good asset management.

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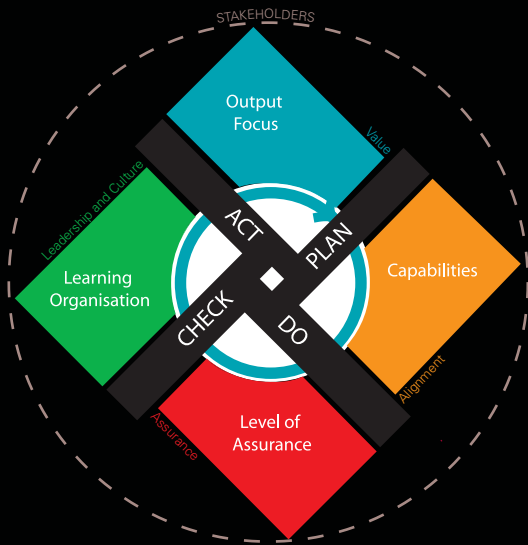
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Asset Management Concept Model



Asset Management System Model



Organisational Systems Model



Stakeholders

