



Asset Management Plan

Asset Management Information System (AMIS)

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Responsibilities

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- Implementation - All TasNetworks staff and contractors.
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Record of Revisions

Section number	Detail
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1 General

1.1 Purpose

The purpose of this Asset Management Plan (AMP) is to define the management strategy for the Asset Management Information System (AMIS). This plan describes the necessary asset-information, tools, applications, processes and interfaces required to support the strategic, tactical and operational management of network assets in accordance with the approved Asset Management Policy.

1.2 Scope

The Asset Management Information System Asset Management Plan (AMIS AMP) focuses on the AMIS systems and software components that are currently commissioned and those that are scheduled to be commissioned or decommissioned as part of the AMIS Improvement Program (AMISIP). This includes improvement areas that result from the implementation of the SAP EAM solution (to be released in Feb 2018).

1.2.1 Objectives

The key objective is to provide a single source reference document that presents essential information required to manage and administer the AMIS.

The AMIS AMP will be the basis upon which asset information management will be continuously improved across TasNetworks.

1.3 Acronyms and Definitions

AM	Asset Management
AMIP	Asset Management Improvement Program
AMIS	Asset Management Information System
AMISIP	Asset Management Information System Improvement Program
AMP	Asset Management Plan
GIS	Geographic Information System
IIMM	International Infrastructure Management Manual 2011
ISO 55000/1/2	The International Standards Organisation (ISO) standard for infrastructure asset management. The suite comprises 3 standards; ISO 55000, 55001 and 55002
SAP	TasNetworks Enterprise Resource Planning environment

1.4 References

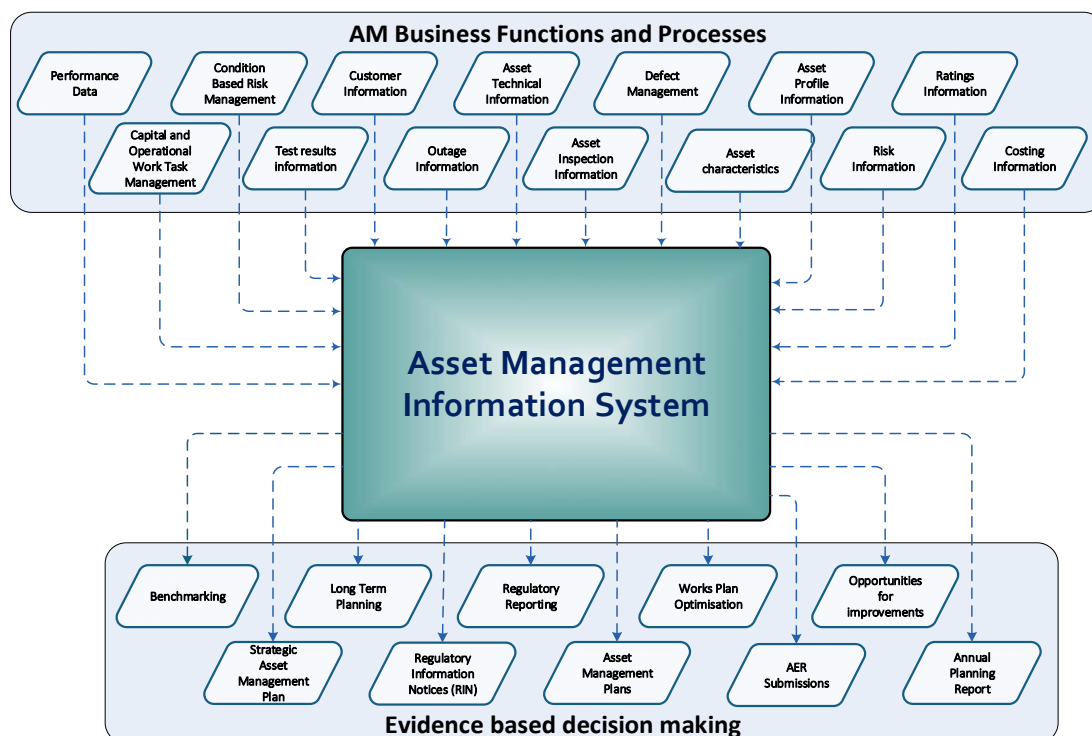
R745475	TasNetworks Corporate Plan Version 3.0 2017-18 to 2021-22, July 2017
R779006	TasNetworks Business Plan 2017-18, Version 4.0 July 2017
R40766	Asset Management Policy Version Number 2.0, August 2016
R764312	TasNetworks Strategy on a Page Version 2.0 2017-18
R150	Information Management Policy Version Number 1.1, March 2017
R209871	Risk Management Framework Version 1.0, March 2015
R764285	TasNetworks Transformation RoadMap Version 3.0 2025

2 Asset Management Information System Description

2.1 Introduction

The overarching management model that underpins the AMIS is outlined in Figure 1. The model shows the interconnection between asset management business functions and evidence-based decision making outputs.

Figure 1 AMIS Management Model



TasNetworks has adopted ISO55000/1/2 (ISO55000) and the International Infrastructure Management Manual (IIMM) as industry best appropriate practice guides to asset management.

Based on these documents AMIS is defined as:

“the combination of people, processes, applications and technology applied to provide the essential outputs for effective asset management such as reduced risk, enhanced network performance, enhanced regulatory compliance, effective asset knowledge management, effective resource utilisation and optimum infrastructure investment.”

The key business drivers for an effective AMIS include, but are not limited to:

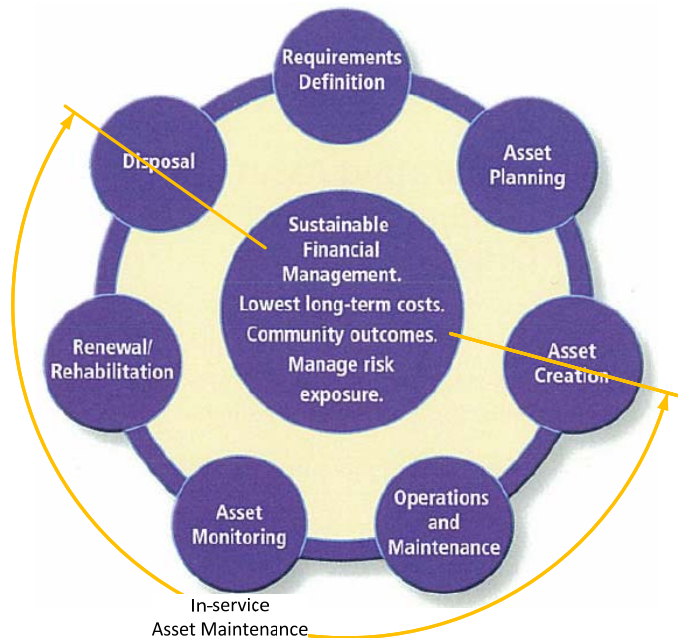
- Supporting cost effective management of physical assets – by providing information and tools to assess and determine the optimal time to replace or augment an asset rather than continuing to maintain it; or the best balance of planned and unplanned maintenance;

- Improving customer service outcomes – by providing high quality accurate data to assist with improved response times to network events;
- Improving the management of maintenance performance and costs – including the ability to report accurately on Key Performance Indicators (KPIs) such as response times and number of planned maintenance activities outstanding;
- Improved data management and analysis – including developing and safeguarding asset data integrity ; and
- Providing process improvements to ensure efficient and effective processes are in place resulting in more accurate data

AMIS delivers this across the asset life cycle (see Figure 2) that includes the following:

- Asset creation;
- Asset operations;
- Asset monitoring;
- Asset renewal and rehabilitation;
- Asset decommissioning; and
- In-service asset maintenance.

Figure 2 The Asset Management Life-cycle

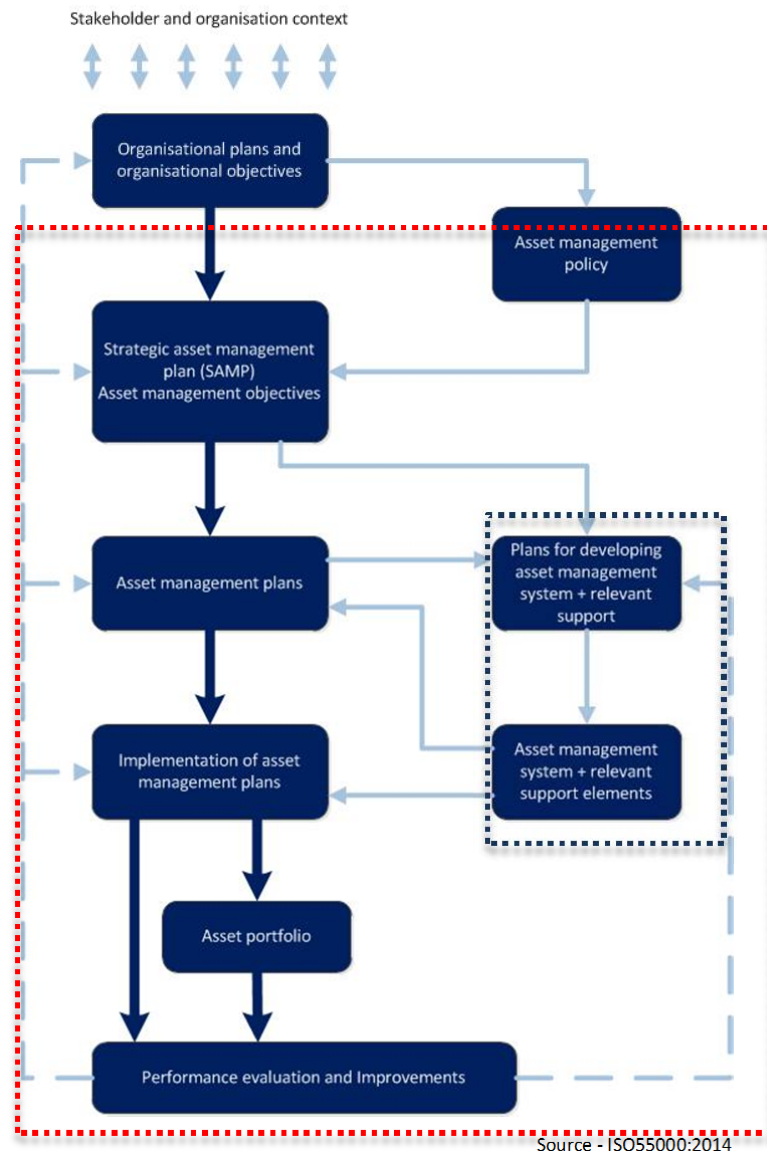


Source - IIM Manual - 2011

Note - Descriptions of each life cycle element can be found in section 1.2.2, page 1|7 of the IIMM.

The relationship between the key elements of an asset management system is shown in Figure 3. The dashed red box designates the boundary of the Asset Management System as defined by ISO55000:2014. The dashed dark blue box represent the AMIS and associated support elements.

Figure 3 Key Elements of a Total Asset Management System

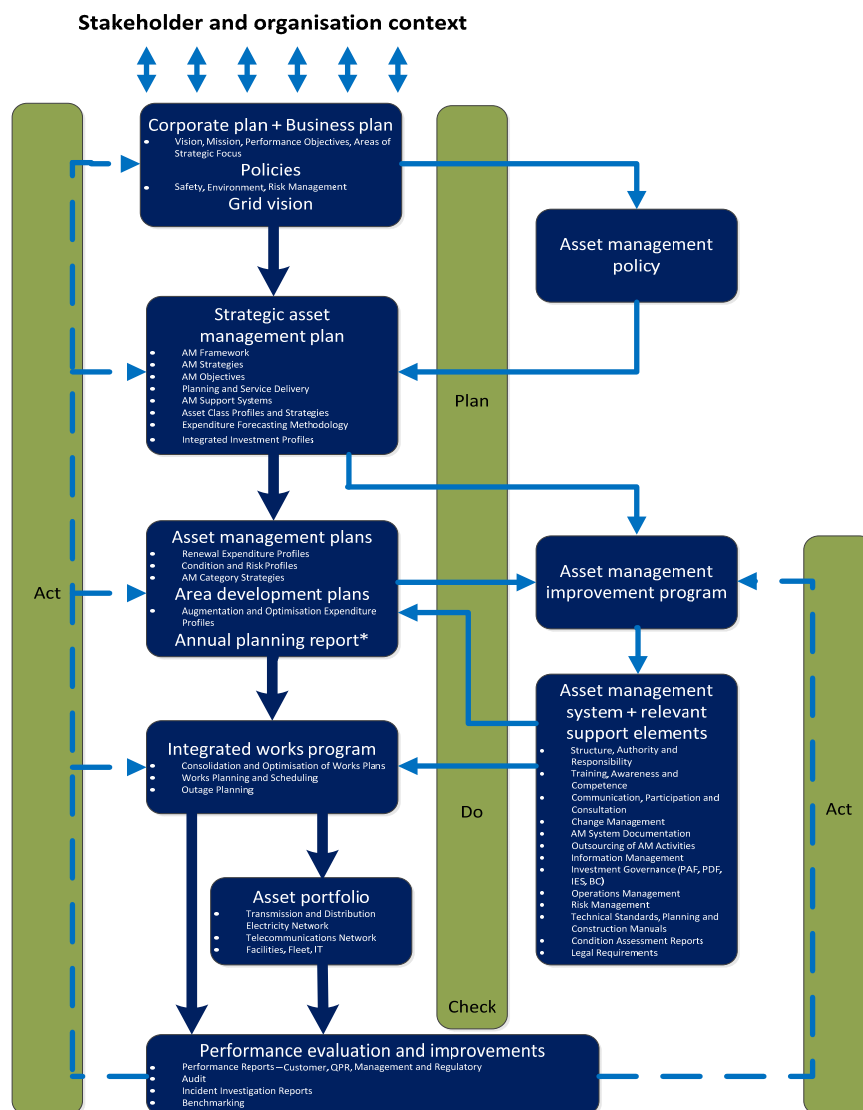


The asset management documentation framework required to support life-cycle asset management is shown in Figure 4. Each document is shown linked to the relevant Asset Management System element in line with ISO55000.

Figure 4 Asset Management Documentation Framework

TasNetworks Asset Management System Documentation Framework

Approved – v2.0 - Dec 2014



* The Annual Planning Report (APR) is a requirement of sections 5.12.2 and 5.13.2 of the National Electricity Rules (NER) and also satisfies a licence obligation to publish a Tasmanian Annual Planning Statement (TAPs). The APR is a compilation of information from the Area Development Plans and the Asset Management Plans.

2.2 AMIS Objectives

The AMIS objectives are to assist in sustaining and improving overall performance of the transmission and distribution networks, including but not limited to:

- ensuring holistic asset information is collected, maintained and readily accessible to support evidence-based asset management decision making;
- enhancing the visibility of, accessibility to and trust in asset information holdings across the business; and
- developing effective AMIS improvement practices that support the life cycle asset management in accordance with ISO55000:2014 and the IIMM.

A fully functioning AMIS will support the business to achieve the following:

- improved long term strategic network asset management capability;
- enhanced network performance;
- reduced network asset related risk;
- improved network asset knowledge management;
- enhanced network regulatory compliance;
- optimised resource use; and
- optimised network asset infrastructure investment.

Once met these objectives will support the requirements of the Corporate Plan and Asset Management Policy by significantly improving the quality, completeness, integrity and consistency of asset information, systems and processes at all levels.

2.3 AMIS Portfolio and Capabilities

Previous AMIS plans have resulted in significant increases in asset information holdings across the business, further underpinning the need of a fit-for-purpose AMIS.

The AMIS portfolio is being progressively expanded and includes the elements as shown in Figure 5.

Figure 5 AMIS Portfolio Areas

- Asset Register and information
- Asset Information Management Standards
- Network Asset Business Intelligence Reporting
- Network Performance Reporting
- Asset risk Management
- Asset Defect Management
- Condition Monitoring
- Long Term works Management
-

2.4 AMIS Systems, Tools and Applications

AMIS is predominately managed through SAP EAM (after February 2018) with some Commercial Off The Shelf (COTS) tools for speciality engineering applications. In addition, several interfaces have been built in-house to integrate with other business software in particular GIS. Refer Table 1 for details of each system.

2.4.1 AMIS Management Methodologies and Tools

To assist with maintaining the AMIS, key tools and methodologies have been adopted to ensure that quality services are delivered to the business.

The key tools and methodologies include, but are not limited to:

- Stakeholder engagement agreements;
- Master Data Change Process;
- Handover packs including checklists;
- Task prioritisation;
- Program and project communication plans;
- Release checklists including release notes;
- System administration guides;
- System user guides;
-
- Network Asset Breakdown Structure;
- Network Asset Nomenclature Standards;
- Network Asset Data Integrity Standards;
- Training notes and documentation;
- User Acceptance Testing (UAT) and sign-off; and
- Peer review process.

A number of these tools and common practices will be reviewed and modified as part of the AMISIP program of work and in line with the SAP-EAM implementation.

2.4.2 Current AMIS Systems Listing

The current AMIS software, tools and applications mapped to stakeholder groups is presented in Table 1.

Table 1 Current AMIS Software, Tools and Applications

AMIS System	Description/Components	Stakeholder Groups/Departments	SAP Implementation Impact	Network(Tran, Dist)	Install Type – Y/N			
					Web	Client	COTS	Custom Built
Asset History Register	A register for maintaining asset history	NIS	Decommissioned	Dist	N	Y	Y	N
Asset Risk Management System	Condition Based Risk Management (CBRM)	SAM, W&SD	Remaining	Tran	N	Y	Y	N
GIS: • G-Tech • WebMap • GeoMedia • ArcGIS • Geocortex	TasNetworks GIS applications	Whole of business	Remaining	Both	Y	Y	Y	N
NetTRAX	GIS Records tool	GIS Records	Decommissioned	Dist	N	Y	Y	Y
Network Explorer	A web based tool that interfaces to the Spatial Data Warehouse	NIS	Remaining	Dist	Y	N	N	Y
PerfRep – network performance reporting	PerfRep UI PerfRep Service (web service) TranNet (web service) PerfRep Database	SAM	Decommissioned	Tran	N	Y	N	Y

AMIS System	Description/Components	Stakeholder Groups/Departments	SAP Implementation Impact	Network (Tran, Dist)	Install Type – Y/N			
					Web	Client	COTS	Custom Built
Requests to Access the Distribution System (RADS)	A tool used to manage requests for access to, or special conditions on the distribution network.	CENO and W&SD	Decommissioned	Dist	N	Y	N	Y
Region Plan	Works and Resource Planning Tool. SQL Database & Excel spreadsheets.	Works Planning	Remaining	Dist	N	Y	Y	Y
RIS – Static Rating Information System	RIS Generator (console application) RIS Web Site Rating Sheets (Excel) SDS (Site Data Sheet) Compliance	SAM	Decommissioned	Tran	Y	Y	N	Y
SCOPE	TasNetworks Drawings Management System	GIS, Records & Drawings	Remaining	Tran	Y	N	Y	N
Spatial Data Warehouse (SDW)	Used by Distribution for all asset and network data	NIS	Transitionally Decommissioned	Dist	N	N	Y	Y
SINCAL	Power system Electrical performance analysis of the distribution network	NIS	Remaining	Dist	N	Y	Y	N

2.5 Geographic Information System

GIS is globally accepted as an effective solution for recording, reporting and managing spatial asset information.

A effectively integrated GIS provides the ability to carry out many spatial functions for example mapping asset defects against preventive work tasks to see if there is any correlation, or spatially identify a network fault and identify the closest available work crew to respond via thematic mapping and specialised queries.

Some of the key aspects of GIS are:

- a single topologically correct model of the assets for each asset class; this eliminates redundant data;
- modelling the actual connectivity between adjacent connected assets. This allows electrically tracing components along the path, both upstream and downstream;
- use of the same connectivity models by specialist analysis software (e.g. Sincal) as a single source of truth rather than creating separate, redundant models of the same network;
- creating maps as an alternate reporting output where varied content and scales are required;
- GIS provides planning support where short, medium and long terms planning scenarios can be efficiently recorded, and recalled, updated and re-run as required, and
- the ability to locate assets with defects against preventive work tasks to see if there is any correlation, or the ability to identify the location of a network fault and identify the closest available work crew to dispatch.

Examples of GIS outputs include, but are not limited to:

- identification of current and past works against assets by location;
- fault types and number of incidents against assets by location;
- condition of assets by location;
- mapping of risk categories against assets by location;
- age distribution profiles of assets by location;
- future asset replacements by locations; and
- distribution of planned/unplanned maintenance by location.

2.5.1 GIS usage at TasNetworks

The introduction of a new Enterprise Resource Planning (ERP) based Enterprise Asset Management System (EAM), SAP-EAM in early 2018 will provide an opportunity to directly interface GIS to the EAM. This will allow for direct transaction-based GIS activities to occur.

Currently, the GIS is interfaced with the current Spatial Data Warehouse (SDW) prior to moving over to SAP-EAM.

The current GIS landscape across TasNetworks is summarised as follows:

- WebMap – more than 300 users who view spatial information. More than 50% of whom use it daily;
- In field data capture – more than 50 users, e.g. for pole inspections ;
- office based usage – more than 30 users who view and analyse information and create specific map products; and
- spatial data editing – less than 10 users; typically power users who are responsible for updating the GIS.

2.5.2 Future Benefits of AMIS/GIS Integration

A key requirement is the ability to identify and locate assets on a map. A wholly integrated GIS, would provide this capability by presenting different views of network asset information and ultimately support the network asset management decision making process.

This integration will provide the following benefits:

- allow network asset information to be accessible to all users from a single source;
- allow network asset information to be accessed from either GIS or SAP depending on required outputs;
- allow asset information to be displayed in multiple views, spatially on a map;
- allow network asset information to be displayed thematically using symbology, colour coding, etc. For example the ability to geographically display condition data to show condition trending over time; and

These improvements will be delivered through the implementation of the existing GIS Strategy.

2.6 Asset Management Improvement Program

An overarching Asset Management System has been developed by the Asset Strategy and Performance (AS&P) team in accordance with the requirements of international standard ISO55001:2014 – Asset Management – Management System – Requirements (as referenced in the Asset Management Policy).

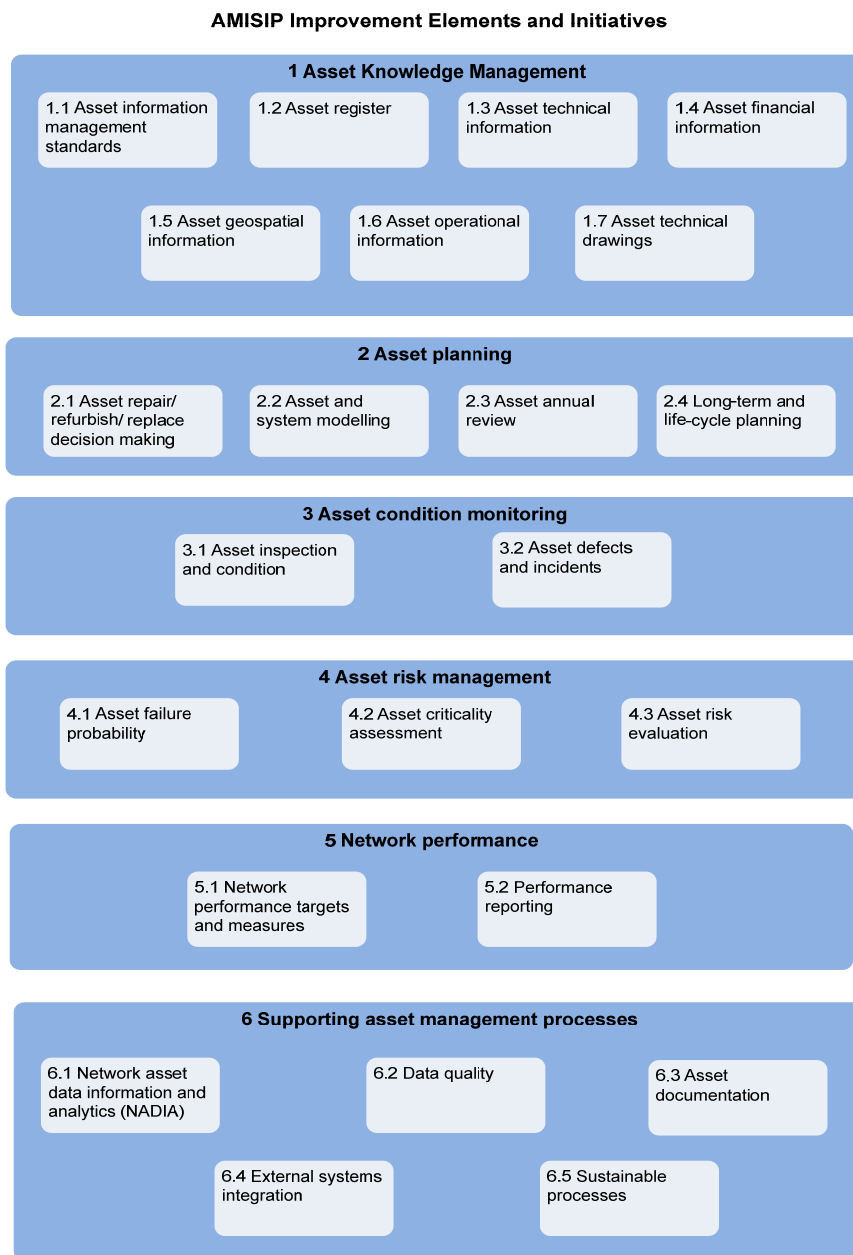
Key asset management improvement areas are being addressed through Asset Management Improvement program (AMIP). To support the AMIP, the AMS team is establishing the AMISIP (see section 2.6.1).

2.6.1 AMISIP Program of Work

The AMISIP serves as an ongoing framework for continual improvement that aligns with the approved AMIP implementation timeframe. The AMISIP contains a prioritised list of areas for improvement to ensure the identified discrepancies are addressed. Figure 6 shows the high level AMISIP program of work initiatives.

As AMISIP outcomes and deliverables are completed this will enable a continuous improvement approach to be taken with the AMIS. AMISIP outputs will also be used to enable and support other projects and innovations across the business.

Figure 6 AMIS Improvement Program Elements & Initiatives



3 Strategic Alignment

3.1.1 Corporate Strategy Alignment

The TasNetworks Corporate Strategy is shown in Figure 9. The strategy presents how TasNetworks will deliver the strategic goals.

This will be achieved by engaging with customers to understand their needs by ensuring the one business asset management systems, information and processes support asset managers to make informed, evidence-based asset management decisions.

Strategic and operational performance business objectives relevant to the AMISIP are derived from the approved TasNetworks Strategy on a page 2017-18. The program aligns to the following areas of the Strategy:

- we understand our customers by making them central to all we do;
- we enable our people to deliver value and keep safe;
- we care for our assets, delivering safe and reliable network services while transforming our business; and
- we operate our business to deliver sustainable shareholder outcomes.

The business initiatives that relate to the AMISIP are as follows:

- safety of our people and the community, while reliably providing network services, is fundamental to the TasNetworks business and remains our immediate priority;
- we care for our assets to ensure they deliver safe and reliable network services to our customers; and
- the strategic key performance indicators that will be impacted through undertaking this program are as follows:
 - customer price considerations – lowest sustainable prices;
 - zero harm – reduced number of significant and reportable incidents; and
 - sustainable cost reduction – efficient operating and capital expenditure.

Figure 7 Strategy on a Page


3.1.2 Asset Management Policy

The Asset Management Policy (refer Figure) outlines how TasNetworks delivers electricity and telecommunication network services to create value for customers, owners and the community.

Consistent with TasNetworks corporate vision and purpose, the policy sets out the overall principles and approach required to achieve excellence in asset management.

This policy includes a number of specific commitments relevant to this AMP examples of these include the following:

- continuously develop and maintain a complete asset register and documentation system for all TasNetworks assets;
- manage the assets, including asset information, to meet strategic goals outlined in the corporate plan;
- apply contemporary condition assessment and risk management techniques to manage risks and opportunities;
- continually adapt, benchmark and improve asset management strategies and practices and contemporary asset management techniques consistent with industry best practice; and
- develop and continually improve asset management information systems and processes to optimise asset management efficiencies and decision making processes.

Figure 11 Asset Management Policy



Asset Management Policy

TasNetworks delivers electricity and telecommunication network services, creating value for our customers, our owners and the community.

This Asset Management Policy applies to all TasNetworks assets and associated activities. Our team members and contractors must comply with this policy and will be supported, resourced, and trained to follow this policy and associated documentation.

Consistent with our vision and purpose, we strive for excellence in asset management and are committed to providing a safe working environment, value for our customers, sustainable shareholder outcomes, care for our assets and the environment, safe and reliable network services, whilst effectively and efficiently managing our assets throughout their life-cycle.

To achieve this commitment, together we will:

- manage our assets to meet the strategic goals, measures and initiatives outlined in the Corporate Plan;
- comply with relevant legislation, licences, codes of practice, and industry standards;
- apply contemporary condition assessment and risk management techniques to identify and effectively manage risks and opportunities, including at a portfolio level;
- continually adapt, benchmark and improve asset management strategies and practices and apply contemporary asset management techniques, consistent with industry best practices;
- develop and continually improve asset management processes and systems to optimise asset management efficiencies and decision making processes;
- adopt the lowest whole-of-life cost solutions for investment in asset creation, replacement or refurbishment projects;
- operate assets safely within prescribed limits and apply dynamic ratings where appropriate;
- maintain a complete and accurate register and documentation system of all our assets;
- prepare and maintain high quality asset management plans, standards, guidelines and procedures;
- ensure our team members are trained, authorised and competent to undertake their work activities;
- work closely with internal and external service providers and contractors to ensure that work performed on assets is consistent with the relevant standards and this policy; and
- undertake periodic audits to ensure assets are being managed in accordance with this policy and the asset management framework, plans, standards, guidelines and procedures.



Lance Balcombe
Chief Executive Officer



Dr Dan Norton AO
Chairman

This policy forms part of TasNetworks' asset management system and framework, which is maintained in accordance with Australian and International standard AS/NZS ISO 55001:2014.

August 2014



3.1.3 Information Management Policy

The AMISIP will be delivered with reference to the Information Management Policy.

The purpose of this policy is to outline the commitment to compliance with the Archives Act 1983 (Tas), through applying best practice Information Management practices.

Effective Information Management supports the business in meeting legislative requirements as well as with achieving Information Management related business process improvement.

This means TasNetworks will undertake the following:

- recognise the importance of information as an asset;
- identify the strategic significance of information and use it to add value to the organisation; and
- ensure that all information is appropriately identified, captured, managed and discoverable throughout its life-cycle; and that all staff and contractors are individually responsible for contributing to this outcome with respect to the information they author or receive.

4 Risk Management

The risk management approach involves managing to achieve an appropriate balance between realising opportunities for gains while minimising adverse impacts. Risk management is viewed as an integral part of good management practice and an essential element of good corporate governance.

Risk management is part of the culture and is embedded into the organisations operating philosophy, business practices and processes.

4.1 Risk Assessment

The key operational risks that have been identified with respect to AMIS and the associated mitigation strategies are outlined below in Table 2.

Table 2 Key Risks and Mitigation Strategies

Risk	Mitigation
Benefits of AMIS are not fully realised	Business processes will be reviewed/updated or developed and accountabilities assigned as part of each development and implementation. Training needs analyses will be undertaken and subsequent training of system users will be conducted. Utilisation and performance of the system will be monitored through the AMIS Audit Framework.
AMIS does not satisfy evolving regulatory needs	Monitoring of the regulatory environment and revenue cap decision will be undertaken to ensure that any new information that becomes available is considered for incorporation in the AMIS. Outcomes and learnings from previous revenue resets are taken into consideration when developing programs for AMIS enhancements.

4.2 Risk Categories

Continued investment in the AMIS will assist in part to mitigate the following risks.

Table 3 Summary of Risks

Risk Category	Risk
Financial	Unreliable asset management information, processes and systems results in the inability to effectively justify expenditure.
	Unreliable asset management information, processes and systems results in reduced ability to determine optimal strategy for asset maintenance, refurbishment or replacement resulting in under/over expenditure.
	Unreliable asset management information, processes and systems results in reduced network performance leading to possible significant regulatory penalties.
Customer	Unreliable asset management information, processes and systems results in an unacceptable increase in unscheduled outages and a follow-on decline in network reliability.
Regulatory Compliance	Unreliable asset management information, processes and systems results in an inability to effectively support regulatory compliance.
	Unreliable asset management information, processes and systems results in an inability to demonstrate effective long-term asset management planning due.
	Unreliable asset management information, processes and systems results in an inability to undertake evidence-based decision making.
Network Performance	Unreliable and inaccurate asset information results in suboptimal asset maintenance, refurbishment and/or replacement leading to a decline in network reliability.
Reputation	Unreliable asset management information, processes and systems results in an inability to comply with the Company's strategic goals.
	Unreliable asset management information, processes and systems results in an inability to achieve compliance with statutory, legal and regulatory obligations.
Environment and Community	Unreliable asset management information, processes and systems results in non-conformance with internal and external environmental policies and regulations.
Safety and People	Unreliable asset management information, processes and systems exposes Field workers to potential accident/injury as they unknowingly make decisions using poor quality information.
	Unreliable asset management information, processes and systems results in possible exposure to hazardous substances/materials.

5 AMIS Life-cycle Management

5.1 AMIS Planning

Strategic AMIS planning involves considering a number of key aspects, including but not limited to the following:

- completing the development of AMISIP;

- implementing the requirements of the AMISIP;
- developing an effective transition approach in response to the SAP-ERP business transformation project; and

5.2 AMIS Financial Management

5.2.1 AMIS Valuation Policy and Methodology

TasNetworks Asset Accounting Standard classifies the AMIS as its own distinct unit of property, i.e. being AMIS as a whole.

The standard describes the estimated useful life as 10 years with a 10% straight-line depreciation. It is on this basis that AMIS is managed financially.

5.3 Core Works and Asset Management System Replacement

EMS-WASP (WASP) is TasNetworks current works and asset management application. As it has exceeded its design life and is no longer being developed or enhanced by the vendor it will be replaced by the SAP-EAM platform in early 2018. Unhooking WASP from multiple business systems will require significant planning that will be included in the SAP-EAM implementation.

While this will involve substantial change for the business, the proven AMIS principles will continue to exist and be incorporated into SAP-EAM. This will strengthen TasNetworks ability to continue to manage its assets effectively.

Improved asset information management will see an increase in confidence in the data and will further enhance future asset management documentation.

It is anticipated that SAP-EAM will present other opportunities to further enhance the ability to continue improving and delivering mature asset management outcomes.

5.4 Ajilis Program

Ajilis is the TasNetworks business transformation program design to implement the SAP-EAM solution to deliver a new suite of integrated, enterprise business systems. The ERP will fully align and integrate processes and systems across the organisation with particular focus on transforming the core business functions including but not limited to:

- asset planning, operation and lifecycle management;
- works management and service delivery;
- procurement and supply chain management;
- financial performance management;
- Human Capital Management and payroll; and
- Governance, Risk and Compliance management.

SAP-EAM will deliver new ways of working that will transform TasNetworks, and will be achieved through:

- removing duplicate and redundant systems;

- having one source of truth for all business information;
- having consistent processes and ways of working across the business; and
- supporting delivery of effective and efficient services both internally and externally.

The benefits of a wholly integrated business solution are expected to be:

- unified business processes, underpinned by a single, enabling IT platform;
- assistance in driving an uplift in capability, highlighted by new skills, processes, tools and systems; and
- provision of greater analytical rigour and capability resulting in the ability to better measure what is important.

The AMIS principles, concepts and methodologies described throughout this document will align with SAP and will continue to continue post SAP implementation.

6 Future Opportunities

A number of future opportunities have been identified as a result of the creation of TasNetworks and from a number of recent external reviews and reports. Additional opportunities will be identified as the AMISIP becomes operational.

Some opportunities already identified include, but are not limited to:

- building on the current mobility platform, further develop and deploy mobility for additional aspects of asset management; and
- Operational Analytics (OA) is being increasingly adopted globally and is allowing utilities to change problem solving/decision making from a historical review of what happened to a predictive view of the future.

Each opportunity is detailed in the following sub-sections.

6.1 Mobility

Globally, mobility solutions are transforming the way companies deliver services, while also improving their bottom line. The increasing uptake of mobile devices is leading to innovative ways to deliver services to staff and customers.

Modern asset management systems, tools and applications have achieved major improvements and shift in design methodology and useability. These improvements, either hardware, software or communications related, have delivered significant enhancements to the way information is presented and processed, particularly in the area of mobility. These enhancements allow for reduced time spent on data collection and verification, saving time and money.

As part of the Ajilis project, there will be an opportunity to identify where and how mobility interfaces could be deployed to support the business.

To underpin this TasNetworks has committed to modernising its current mobility fleet. Following an extensive assessment, a replacement device has been selected. Planning work is underway to roll these devices out (from mid-2017) with the least disruption possible and the new devices will be rolled out to field crews from mid-2017.

6.2 Operational Analytics (OA)

Operational Analytics (OA) is an element of enterprise Business Analytics that encompasses data collection, reporting, dashboards, and queries. It is the process of examining an organisation's data and applying a combination of statistical and quantitative technologies to extract useful asset knowledge. Analytics provide users with interactive, ad hoc information generated through data mining and pattern analysis to identify new insights.

In terms of AMISIP, OA will focus on improving the effectiveness and efficiency of asset management business processes and decisions. In this context, OA will specifically consider managing assets, analysing operating efficiency and managing risk. As there has been insufficient attention paid to the operational side of utility businesses, real value can be realised.

Analytics answer questions like 'why' and 'what if' and can be used to optimise efficiency, minimise costs, reduce risk and predict trends allowing for more informed business decisions.

6.2.1 Benefits of OA

OA will allow TasNetworks to address key issues, including but not limited to:

- increasing regulatory pressures – to reduce or constrain costs;
- aging asset base (replacement v refurbishment) - increasing funding constraints; and
- aging workforce - loss of significant institutional asset knowledge.

Adopting OA will optimise expenditure and maximise productivity of assets and resources.

6.2.2 Operational problems to be solved

Utilities typically struggle to effectively resolve a number of key problems, including but not limited to:

- limited visibility of asset failure due to defects, or inappropriate operating configurations;
- smart in-field devices not being appropriately utilised;
- lack of intelligence on network parameters (e.g. load flows, voltage fluctuations, high number of operations, transformer sizing, impact of solar penetration);
- less than optimal asset management outcomes (e.g. prioritisation of work, matching resources to work, unit rates, asset risk, etc);
- inability to effectively predict failure from lack of effective asset health data;
- limited visibility of tangible operational risk; and
- limited visibility and accessibility to quality asset data resulting in slow and ineffective decision-making.

OA is expected to help solve these problems by enabling utilities to:

- predict and improve business performance (i.e. technical - economic - financial) through effective predictive analytics;
- predict and extend asset lifecycles based on quantitative and qualitative analysis that ensure AM decisions use quality evidence-based information;

- improve visibility and accessibility for key asset and performance data across the business;
- determine tangible risks that factor in consequence and likelihood;
- improve quality through effective data validation and cleansing analytics;
- progressively refine and improve maintenance schedules; and
- support the improve asset management efficiency and productivity.

6.2.3 Implementation of OA

Initiative 6.1 of AMISIP program is designed to address asset information analytics. Refer to the AMIS Improvement Program outlined in 2.6.1, specifically Figure 6. for more information.