Investment Evaluation Summary (IES)

Project Details:

Project Name:	Asset Management Information System (AMIS) Improvement Program
Project ID:	00585
Thread:	Operational Support Systems
CAPEX/OPEX:	CAPEX
Service Classification:	Standard Control
Scope Type:	C
Work Category Code:	AMITS
Work Category Description:	AMIS Improvement Program
Preferred Option Description:	Implement the preferred solution of an advanced, TasNetworks AMIS that will provide the essential outcomes for Asset Management in accordance with the International Infrastructure Management (IIM) manual and the ISO:55000 suite of international standards.
Preferred Option Estimate (Nominal Dollars):	$24,700,000

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Unit ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volume	1	1	1	1	1	1	1	1	1	1
Estimate ($)										
Total ($)	$2,600,000	$2,250,000	$2,850,000	$2,500,000	$2,000,000	$2,000,000	$2,000,000	$2,500,000	$3,250,000	$2,750,000

Governance:

Project Initiator:	Mark Richardson	**Date:**	24/03/2015
Thread Approved:	Mark Richardson	**Date:**	20/10/2015
Project Approver:	Mark Richardson	**Date:**	20/10/2015

Document Details:

Version Number:	1

Related Documents:

Description	URL
TasNetworks Transmission and Distribution Asset Management Maturity Assessment	http://teamzone.tnad.tasnetworks.com.au/asset-management-systems/_layouts/15/WopiFrame.aspx?sourcedoc=/asset-management-systems/Shared%20Documents/AIS%20Analyst%20(David)/DD%2017%20Working/GHD%20AM%20Maturity%20Assessment%20for%20TasNetworks%202014.docx&action=default&DefaultItemOpen=1
TasNetworks Policy - Asset Management Policy	http://businesszone.tnad.tasnetworks.com.au/policies/_layouts/15/WopiFrame2.aspx?sourcedoc=/policies/Assets/Asset%20Management%20Policy.docx&action=default&DefaultItemOpen=1
TasNetworks AMIS Asset Management Plan	http://assetzone.tnad.tasnetworks.com.au/strategic-asset-management/_layouts/15/WopiFrame2.aspx?sourcedoc=/strategic-asset-management/Management%20Plans/AMIS%20Asset%20Management%20Plan.DOCX&

	action=default&DefaultItemOpen=1
NPV Calculations	http://projectzone.tnad.tasnetworks.com.au/business-projects/nis-program/DD17SAM/Deliverables/NIS/DD17%20AMITS-SFTAA%20NPV%20Calculations.xlsx

Section 1 (Gated Investment Step 1)

1. Background

The establishment of TasNetworks brought with it a number of key, asset management related inconsistencies including but not limited to mis-aligned business processes and asset information management anomalies.

To address these it is important to establish a TasNetworks solution to identify the necessary processes, information and tools required to support the strategic, tactical and operational management of the company's network assets, transmission and distribution, in accordance with the company's Asset Management Policy Version 1.0 of August 2014.

Asset Management objectives have been approved that define the outcomes required from the TasNetworks' assets to ensure TasNetworks' strategic goals are met.

1.1 Investment Need

The investment need is based on the necessity to adhere to the approved TasNetworks Asset Management Policy and to support the TasNetworks strategy on a page 2015 - 2016 strategy, in particular the 'one business' pillar.

TasNetworks Asset Management System is being developed in accordance with the requirements of international standard ISO55001:2014 – Asset Management – Management System – Requirements (as referenced in the Asset Management Policy). A requirement of this standard is that asset management and the asset management system be continually improved. To support this requirement an Asset Management Improvement program has been established to further develop the asset management system and improve asset management capability.

1.2 Customer Needs or Impact

TasNetworks continues to undertake consumer engagement as part of business as usual and through the 'voice of the customer' program. This engagement seeks in depth feedback on specific issues relating to:

- How prices impact on services;
- Current and future consumer energy use;
- Outage experiences (frequency and duration) and expectations;
- Communication expectations;
- STPIS (Service Target Performance Incentive Scheme) expectations (i.e. reliability standards and incentive payments); and
- Increased understanding of the electricity industry and TasNetworks.

Consumers have identified safety, restoration of faults/emergencies and supply reliability as the highest performing services offered by TasNetworks. Consumers also identified that into the future they believe that affordability, green, communicative, innovative, efficient and reliable services must be provided by TasNetworks.

The AMIS program will specifically address customer needs in the areas of improved service levels from reduced outages resulting in improved network availability; increased cost savings from improved asset management practices; achieving 'zero harm' commitments in terms of safety toward customers and TasNetworks staff and the reliable and secure operation of the Network.

1.3 Regulatory Considerations

The significance of electricity as an essential service to the community, allied to the dangers associated with it imposes a significant number of formal requirements upon TasNetworks. Consequently TasNetworks operates in a highly regulated business environment that is continually changing and importantly, it must operate in accordance with a substantial suite of state and national legislation, regulations and industry codes that together act to impose specific compliance requirements on the organisation. The need to comply with statutory and regulatory obligations has a significant influence on asset management processes and practices and is a vitally important element of the asset management framework. The AMIS program supports the regulatory environment by incorporating regulatory compliance into the core AMIS framework. The program will further support achievement of the following capital and operational expenditure objectives, as described by the National Electricity Rules, section 6.5.7(a). These include:

(2) Comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;

(3) To the extent that there is no applicable regulatory obligation or requirement in relation to:

(i) The quality, reliability or security of supply of standard control services; or

(ii) The reliability or security of the distribution system through the supply of standard control services, to the relevant extent:

- Maintain the quality, reliability and security of supply of standard control services; and
- Maintain the reliability and security of the distribution system through the supply of standard control services; and (4) Maintain the safety of the distribution network through the supply of standard control services.

2. Project Objectives

An Asset Management Information System (AMIS) is a combination of people, processes, and technology applied to provide the essential outputs for effective asset management. These outputs include:

- Reduced risk;
- Enhanced network performance;
- Enhanced regulatory compliance;
- Effective knowledge management;
- Effective resource utilisation and optimum infrastructure investment.

It is intended that the AMIS program will deliver improved business systems and processes to further develop the efficiency of TasNetworks asset management activities on an ongoing basis. This will support the 'one business' strategic goal is it will interlink asset management processes and information through the entire asset life-cycle including asset creation, operation and maintenance, performance monitoring and decommissioning and disposal. AMIS will also provide a robust platform for the extraction of asset information for various purposes.

The AMIS management model to be implemented by TasNetworks has the objectives of:

- Ensuring that holistic asset information is maintained and made available to support evidence base decision making;
- Enhancing the visibility, accessibility and trust in our asset data;
- Sustaining and improving network performance; and
- Adopting continual improvement practices to support the asset management process.

3. Strategic Alignment

3.1 Business Objectives

Strategic and operational performance business objectives relevant to this program are derived from TasNetworks 2015 Corporate Plan, approved by the Board in 2015. This program aligns to the following areas of the corporate plan:

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

3.2 Business Initiatives

The business initiatives that relate to the AMIS program 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; and
- We care for our assets to ensure they deliver safe and reliable network services to our customers;
- 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.

4. Current Risk Evaluation

The current risk assessment analysis has identified the underlying risks as being unreliable, ineffective and poorly performing asset management information, systems, tools and applications as outlined in the risk matrix table.

If left unaddressed it is highly likely that future, decision-based asset management decisions will be severly compromised and in some instances could impact the operation of the network.

4.1 5x5 Risk Matrix

TasNetworks business risks are analysed utilising the 5x5 corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk Category	Risk	Likelihood	Consequence	Risk Rating
Customer	Unreliable asset management information, processes and systems result in an unacceptable increase in unscheduled outages and a follow-on decline in network reliability.	Likely	Moderate	High
Environment and Community	Unreliable asset management information, processes and systems result in	Possible	Moderate	Medium

	non-conformance with internal and external environmental policies and regulations.			
Financial	Unreliable asset management information, processes and systems result in reduced ability to determine optimal strategy for asset maintenance, refurbishment or replacement resulting in under/over expenditure.	Likely	Moderate	High
Financial	Unreliable asset management information, processes and systems result in reduced network performance leading to possible significant regulatory penalties.	Likely	Moderate	High
Financial	Unreliable asset management information, processes and systems result in the inability to effectively justify expenditure.	Likely	Major	High
Network Performance	Unreliable and inaccurate asset information processes and systems result in suboptimal asset maintenance, refurbishment and/or replacement leading to a decline in network reliability.	Likely	Moderate	High
Regulatory Compliance	Unreliable asset management information, processes and systems result in an inability to undertake evidence-based decision making.	Almost Certain	Minor	Medium
Regulatory Compliance	Unreliable asset management information, processes and systems result in an inability to effectively support regulatory compliance.	Likely	Minor	Medium
Regulatory Compliance	Unreliable asset management information, processes and systems result in an inability to demonstrate effective long-term asset management planning due.	Likely	Minor	Medium
Reputation	Unreliable asset management information, processes and systems result in an inability to achieve compliance with statutory, legal and regulatory obligations.	Almost Certain	Moderate	High
Reputation	Unreliable asset management information, processes and systems result in an inability to comply with the Company's strategic goals.	Almost Certain	Moderate	High
Safety and People	Unreliable asset management information, processes and systems result in possible exposure to hazardous substances/materials.	Rare	Major	Medium
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.	Rare	Major	Medium

Section 1 Approvals (Gated Investment Step 1)

Project Initiator:	Mark Richardson	**Date:**	24/03/2015
Line Manager:		**Date:**	
Manager (Network Projects) or Group/Business Manager (Non-network projects):		**Date:**	
[Send this signed and endorsed summary to the Capital Works Program Coordinator.]			

Actions			
CWP Project Manager commenced initiation:		**Assigned CW Project Manager:**	
PI notified project initiation commenced:		**Actioned by:**	

Section 2 (Gated Investment Step 2)

5. Preferred Option:

An AMIS is a combination of people, processes, and technology collectively applied to provide the essential outcomes for Asset Management in accordance with the International Infrastructure Management (IIM) manual and the ISO:55000 suite of international standards. These include, but are not limited to:

- Reduced risk of asset failure;
- Enhanced network performance;
- Enhanced compliance with regulatory and governance requirements;
- Effective collection and management of asset knowledge;
- Effective resource utilisation; and
- Optimum infrastructure investment.

The TasNetworks AMIS will achieve these outcomes as it will be the mechanism that interlinks asset management information and processes across the end-to-end asset life cycle (i.e. acquire, operate, maintain and dispose) as described in the IIM manual and ISO:55000 international standards. Accordingly the preferred solution provide an advanced, unified AMIS across TasNetworks operations. This involves identifying, specifying, developing and deploying fit-for-purpose asset information, processes, procedures and supporting documentation to support evidence-based decision making in accordance with the strategic, tactical and operational asset management practices of the business.

5.1 Scope

The scope of work consists of a number of initiatives that, when implemented, will deliver a fully integrated, one business AMIS. The identified business process improvements for the period are described below. The AMIS program elements and initiatives required to achieve this are split across a number of periods and include but are not limited to, the following:

Period - 2017/18 and 2018/19

- Asset Knowledge Management: - Asset Technical Information - Asset Financial Information - Asset Geospatial Information - Asset Operational Information
- Asset Planning: - Asset Repair/Refurbish/Replace Decision Making - Asset Annual Review - Long-term and Life-cycle Planning
- Asset Condition Monitoring: - Asset Inspection and Condition - Asset Defects and Incidents
- Asset Risk Management: - Asset Failure Prediction - Asset Criticality Assessment - Asset Risk Evaluation
- Network Performance: - Network Performance Targets and Measures - Performance Reporting
- Supporting Asset Management Processes: - Network Asset Data Information and Analytics (NADIA) - Data Quality - External Systems Integration - Sustainable Processes
- GIS integration with proposed ERP
- Asset Register realignment (post ERP)
- AMIS interface realignment (post ERP)
- Mobility integration with ERP

Period – 2019/20

- Asset Planning (continued): - Asset and System Modelling
- Asset Condition Monitoring (continued): - Asset Inspection and Condition - Asset Defects and Incidents
- Asset Risk Management (continued): - Asset Failure Prediction - Asset Criticality Assessment - Asset Risk Evaluation
- Supporting Asset Management Processes (continued): - Network Asset Data Information and Analytics (NADIA) - Data Quality - Asset Documentation - External Systems Integration - Sustainable Processes - External Systems Integration - Sustainable Processes

Period - 2020/21 to 2026/27 Appropriate activities and initiatives for this period have not been developed and are under consideration.

Exclusions The following non-network asset information and business functions and systems are out-of-scope of the AMIS program, with a proviso that system interfaces with AMIS applications may be constructed, where prudent and efficient, to streamline the underlying business functions and processes:

- Processes and systems related to Facilities, IT and Fleet;
- Human Resource management; • Procurement.

5.2 Expected outcomes and benefits

The expected outcomes from the AMIS program are as follows:

- It will ensure that holistic network asset information will be available to support evidence based asset management decision making;
- It will provide enhanced visibility, accessibility and trust in network asset information and processes;
- It will support ongoing improvement in network performance; and
- It will ensure the development and adoption of continuous improvement practices to support asset management processes.

The expected key benefits are summarised as follows:

- Improved trust in the accuracy, completeness and integrity of network asset information and processes;
- Increased confidence to make decisions that are based on high quality and reliable asset information;
- Improved quality, reliability and availability of network asset information.
- Improved processes to support revenue determination submissions;
- Enhanced asset management processes will be embedded into daily activities;
- Improved asset information accuracy, integrity, quality and availability that supports BAP asset management decision making;
- Reduction in the number of outages due to improved network availability resulting from effective asset information and processes.

5.3 Regulatory Test

There is no specific regulatory test defined for this program of work.

6. Options Analysis

6.1 Option Summary

Option description	
Option 0	Do Nothing. Base Option - Do Nothing poses an unacceptable business risk by limiting the capability to undertake effective, evidence-based decision making across the asset management operations of the business. Ultimately this could adversely compromise the company's ability to comply with a number of policy goals.
Option 1 (preferred)	Implement the preferred solution of an advanced, TasNetworks AMIS that will provide the essential outcomes for Asset Management in accordance with the International Infrastructure Management (IIM) manual and the ISO:55000 suite of international standards.

6.2 Summary of Drivers

Option	
Option 0	Not applicable.
Option 1 (preferred)	Drivers include: • 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; • develop and continuously improve asset management processes and systems to optimise asset management efficiencies and decision making processes; • 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; • reduced risk of asset failure; • enhanced network performance; • enhanced compliance with regulatory and governance requirements; • effective collection and management of asset knowledge; • effective resource utilisation; • optimum infrastructure investment.

6.3 Summary of Costs

Option	Total Cost ($)
Option 0	$0
Option 1 (preferred)	$24,700,000

6.4 Summary of Risk

The target risk profile at the completion of the project is expected to achieve successful risk mitigation of all 'high' risks. It is expected that a number of medium risks will be mitigated as a result of the addressing the high risks.

6.5 Economic analysis

Option	Description	NPV
Option 0	Do Nothing. Base Option - Do Nothing poses an unacceptable business risk by limiting the capability to undertake effective, evidence-based decision making across the asset management operations of the business. Ultimately this could adversely compromise the company's ability to comply with a number of policy goals.	$0
Option 1 (preferred)	Implement the preferred solution of an advanced, TasNetworks AMIS that will provide the essential outcomes for Asset Management in accordance with the International Infrastructure Management (IIM) manual and the ISO:55000 suite of international standards.	-$19,937,835

6.5.1 Quantitative Risk Analysis

TasNetworks business risks are analysed in accordance with the 5x5 corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

6.5.2 Benchmarking

Direct benchmarking against industry peers has not been undertaken however TasNetworks is aware that the provision and delivery of advanced asset management information initiatives is considered a high priority for other Distribution Network Service Providers (DNSP) around Australia.

6.5.3 Expert findings

In July 2014 GHD undertook a base line study of the current Asset Management (AM) processes and practices utilised in the management of infrastructure assets, and recommended a prioritised AM improvement program for TasNetworks. This assessment determined the current level of sophistication of asset management processes and practices and identified the gap between what is deemed to be best appropriate practice as described by the ISO55000 standards and having consideration for the size and complexity of the infrastructure asset portfolios involved. The key output of the study was a prioritised asset management improvement program that includes specific initiatives around Data and Information and Technology.

RECOMMENDED IMPROVEMENT PROJECTS

DATA AND INFORMATION

Process for Managing Asset Knowledge – to develop effective processes and procedures to improve the management of asset knowledge. Tasks include:

- Extend ISO9001 accreditation across the business;
- Link drawings/plans of facilities to GIS;
- Develop procedures to ensure electronic Maintenance Manuals are deployed;
- Develop procedures to manage externally supplied distribution documents;
- Review procedures and processes to capture necessary asset data across asset classes;
- Review processes and procedures to collect all physical attribute data across all asset classes.

ASSET DATA and KNOWLEDGE

To review and redevelop the individual transmission and distribution asset registers into a single TasNetworks asset register. The key improvement tasks include:

- Standardise physical asset attribute definitions across the single TasNetworks asset register;
- Extend or develop processes and procedures to collect condition and risk information across all relevant asset classes;
- Review and modify the asset hierarchy for the new asset register to ensure it meets the future needs of TasNetworks;
- Review and develop consistent asset data standards and glossaries.

ACTIVITY DATA AND KNOWLEDGE

Improve known data capture issues with operations and maintenance data to ensure job close-out processes are completed on time. The key improvement areas include:

- Review and improve current work practices to ensure activity data and knowledge comprising asset risk, maintenance and operations, work/resource management, valuation, cost histories, job costing and life cycle data are the most appropriate for TasNetworks.

TECHNOLOGY

Asset and Works Management Information Systems – WASP is the current works management system (and has reached the end of its useful life). It operates in standalone versions for the transmission and distribution networks where they are not interlinked. Key improvements include:

- Develop processes and procedures to improve the timeliness and feedback from the field regarding asset utilisation, asset condition and asset performance;
- Develop improved quality assurance checking of Contractor information, looking for accuracy and data integrity in a common format for uploading into the various systems.

6.5.4 Assumptions

The key assumptions for the AMIS program include:

- TasNetworks has access to business process modelling expertise (i.e. internally or externally) with the key skills necessary to support the AMIS team;
- Other TasNetworks and/or external resources are available to assist the AMIS team as required;
- TasNetworks can provide operational and administrative support of the AMIS systems and applications.

Section 2 Approvals (Gated Investment Step 2)

Project Initiator:	Mark Richardson	**Date:**	24/03/2015
Project Manager:		**Date:**	

Actions			
Submitted for CIRT review:		**Actioned by:**	
CIRT outcome:			