Investment Evaluation Summary (IES)

Project Details:

Project Name:	Telecommunications Voice Systems
Project ID:	00876
Thread:	Operational Support Systems
CAPEX/OPEX:	CAPEX
Service Classification:	Standard Control
Scope Type:	D
Work Category Code:	AMITS
Work Category Description:	AMIS Improvement Program
Preferred Option Description:	Planned Telephone System Replacement
Preferred Option Estimate (Nominal Dollars):	$2,576,717

	17/18	19/20	21/22	23/24	25/26	26/27	27/28
Unit ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volume	1	1	1	1	1	1	1
Estimate ($)							
Total ($)	$1,697,280	$120,030	$319,689	$120,030	$120,030	$199,659	$120,030

Governance:

Project Initiator:	Marcus Excell	**Date:**	31/03/2015
Thread Approved:	Josh Cunningham	**Date:**	19/10/2015
Project Approver:	Josh Cunningham	**Date:**	19/10/2015

Document Details:

Version Number:	1

Related Documents:

Description	URL

Section 1 (Gated Investment Step 1)

1. Background

TasNetworks owns and operates a telephone system with services utilised by TasNetworks staff for the critical voice communications between electricity infrastructure sites. Clear and reliable voice communications are critical to the safe operation of the electricity system. The voice system design focusses on operational reliability for the electricity infrastructure sites whilst providing a feature rich environment for the administrative offices.

The 2014-2019 transmission proposal included a justification for the upgrade of telephone system infrastructure to maintain a suitable telephone system enivronment. This investment analysis considers the additional expenditure required following the merger of the transmission and distribution businesses.

The continued provision of voice communications to field crews is also considered in this proposal.

1.1 Investment Need

The Telecommunications Telephone System Asset management Plan details TasNetwork's requirements to maintain a supported telephone system and the expenditure required. With the increased number of users on the system following the merger of the transmission and distribution businesses, the system upgrade costs are increased proportionally. The design life of the system software is 2.5 years.

A major component of this investment is the continued provision of voice communications for field based crews. At present this is facilitated through the use of the Tasmanian Governments Trunk Mobile Radio system. With the Government planning to upgrade the system in 2017/18, Tasnetworks will need to replace all of the remote handsets at the same time. This proposal is requesting funding for the handsets which transferred to TasNetworks from the distribution business.

1.2 Customer Needs or Impact

These services are supporting the operations of the electricity network as well as enabling internal organisational processes. These services are often invisible to customers and are a requirement for the electricity system. Customer consultation is through routine Tasnetworks processes including ongoing regular customer liaison meetings and in future the Annual Planning Review.

1.3 Regulatory Considerations

The telephone network provides the voice functionality throughout the electricity system as required in the National Electricity rules. (NER 4.11.3).

2. Project Objectives

To provide high reliability voice communications services to Tasnetworks locations and field staff to cater to the needs of the Tasnetworks business. The program of work focusses on the Telephone system assets and in particular caters for the additional cost requirements of system upgrades (charged on a per user basis) as a result of the addition of the distribution business to the system. The program includes:

- Telephone system core hardware – voice servers, central switches, firewalls, gateways and session border controllers;
- Telephone system software – voice server software, media servers, contact centre software, deployment servers,
- Control Room phone system upgrade;
- Mobile Radio Handset replacements to align with the Government's planned upgrade of the system.

3. Strategic Alignment

3.1 Business Objectives

Continuously improve business processes - Ensure the availability, capacity and capabilities of the telephony infrastructure meet business expectations, functions and processes that rely of voice communications. Not undertaking this project places unnecessary safety risks on Tasnetworks staff and plans to operate the network in a non-compliant manner. This is an unacceptable outcome.

3.2 Business Initiatives

As critical assets necessary for the reliable operation of voice communications, it is necessary to ensure good asset management practices. The assets need to be supported by the vendor and the manufacturer to ensure adequate product patching against security threats, and to ensure complex asset failures can be resolved quickly.

4. Current Risk Evaluation

The present telephone system applications has a life of 2.5 years and the hardware has a life of 5 years. The obsolete assets are not supported by the vendor. The devices capabilities will not provide the same level as modern devices and will create incompatibilities with new devices when the system is expanded. Obsolete devices are also not included in updated versions of management systems and therefore cannot be managed remotely. The risk of running obsolete hardware and software means that the consequence of the device failure will be higher since the support from the vendor is not available.

The Trunk Mobile Radio is utilised for the communications between field crews and for field crews to communicate with the control centres. The Tasmanian Government are proposing to replace the Trunk Mobile Radio System with an updated technology network. The present handsets will not work with the new technology 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	Inappropriate Customer management and asset management which risks the	Unlikely	Minor	Low

	retention of customers and the long term performance of the network.			
Network Performance	Poor network performance risks the critical services of the telephone network required during switching and system electricity system events.	Possible	Minor	Low

Section 1 Approvals (Gated Investment Step 1)

Project Initiator:	Marcus Excell	**Date:**	31/03/2015
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:

The program of work focusses on the Telephone system assets and in particular caters for the additional cost requirements of system upgrades (charged on a per user basis) as a result of the addition of the distribution business to the system. The program includes:

- Telephone system core hardware – voice servers, central switches, firewalls, gateways and session border controllers;
- Telephone system software – voice server software, media servers, contact centre software, deployment servers,
- Control Room phone system upgrade;
- Mobile Radio Handset replacements to align with the Government's planned upgrade of the system.

5.1 Scope

The central telephone system is included in the transmission determination however with the addition of the distribution business and the Tasnetworks call centre, the licensing and product upgrade costs are higher. The overall project scope is listed below however the pricing under this project is purely for the additional costs of having the distribution business and call centre included.

- The OSV application upgrades are to be performed with minimal disruption to the operation of the network;
- New hardware will be mounted in existing equipment cabinets as per the site designs. Existing equipment to be superseded may need to be temporarily relocated to free require rack space for the installation;
- All phone system upgrades to be undertaken without disrupting the operations of the power system;
- Ensure the system performance of the telephone system meets the service requirements as detailed in the Telecommunications Telephone System Asset Management Plan ;
- Remove redundant telephone system hardware and other associated components superseded by the new telephony equipment;
- Install appropriate management equipment (where required) and integrate the new equipment into TNOCS; and
- TMR Handset replacements are to be scheduled alongside the Tasmanian Government's mobile radio system replacement (Government system replacement scheduled for 2017/18).

5.2 Expected outcomes and benefits

The purpose of the upgrade is to

- Meet and maintain the regulatory requirements of the business under the National Electricity Rules;
- Provide an essential and robust telephone system to service the operational and administrative functions of the business;
- Continue to deliver reliable voice communications functionality to regional and remote areas across the transmission network and throughout the business;
- Improve safety outcomes with dedicated, reliable voice services at remote sites.

5.3 Regulatory Test

Not applicable, as this is not an augmentation project.

6. Options Analysis

The project considers two options against the do nothing option. The planned replacement program, and an option to defer the expenditure by 5 years. The option to defer the expenditure by 5 years means is to maintain the existing asset which has a 2.5 year life by two times its life. This will place the service at risk of loss. In addition, not replacing (or delaying the replacement of) the mobile radio handsets will mean that the field crews are unable to communicate effectively which will reduce safety and decrease the electricity system performance and increase network maintenance costs. It is deemed that risks associated with maintaining the assets is increasing and higher than what is tolerable and therefore the Do Nothing option and the defer option are not consider credible. The preferred option is based on addressing these risks and is the option to replace the existing assets with modern network devices.

6.1 Option Summary

Option description	
Option 0	Do Nothing
Option 1 (preferred)	Planned Telephone System Replacement
Option 2	Delay replacement by 5 years

6.2 Summary of Drivers

Option	
Option 0	• IT equipment refresh cycle of 5 years. Outside of that time products are obsolete, not functional with the software and out of vendor support. • Equipment will be beyond its useful service life; • Software refresh is on a 2 year cycle. Outside of that time products are obsolete, and not supported; • Software patching is no longer available and will therefore open Tasnetworks up to cyber security issues; • Field communications will become obsolete and not functional following the Governments planned Trunked Mobile Radio Replacement.
Option 1 (preferred)	• Hardware devices will remain in support and capable of operating the system. • Software will remain supported and will remain security patched. • Mobile radio handsets will be available for the continued operation of the field communications with the Governments proposed replacement of the trunked mobile radio network.
Option 2	• IT equipment refresh cycle of 5 years. Outside of that time products are obsolete, not functional with the software and out of vendor support.

	• Equipment will be beyond its useful service life; • Software refresh is on a 2 year cycle. Outside of that time products are obsolete, and not supported; • Software patching is no longer available and will therefore open Tasnetworks up to cyber security issues; • Field communications will become obsolete and not functional following the Governments planned Trunked Mobile Radio Replacement.

6.3 Summary of Costs

Option	Total Cost ($)
Option 0	$0
Option 1 (preferred)	$2,576,717
Option 2	$2,257,029

6.4 Summary of Risk

Up-to-date telephone systems provide:

- Modern performance;
- Reduced downtime during a system failure due to the access to the vendors experts;
- A secure environment through system patching;
- Continued system management through operational management systems.
- Continued provision of voice communications to the field.

6.5 Economic analysis

Option	Description	NPV
Option 0	Do Nothing	$0
Option 1 (preferred)	Planned Telephone System Replacement	-$1,935,818
Option 2	Delay replacement by 5 years	-$845,129

6.5.1 Quantitative Risk Analysis

A quantitative risk analysis has not been undertaken since the project is a straight renewal.

6.5.2 Benchmarking

No benchmarking has been undertaken.

6.5.3 Expert findings

No external expert findings have been included.

6.5.4 Assumptions

The project assumes the the application is updated every two years and the hardware is replaced every 5 years.

Section 2 Approvals (Gated Investment Step 2)

Project Initiator:	Marcus Excell	**Date:**	31/03/2015
Project Manager:		**Date:**	

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