Appendix 1.7: Asset management system - configuration management

Regulatory proposal for the ACT electricity distribution network 2019-24
January 2018

Disclaimer: On 1 January 2018, the part of ActewAGL that looks after the electricity network changed its name to Evoenergy. This change has been brought about from a decision by the Australian Energy Regulator. Unless otherwise stated, ActewAGL Distribution branded documents provided with this regulatory proposal are Evoenergy documents.

evoenergy

Asset Management System – Configuration Management

Version number 4.0 I Effective date: 25 January 2018

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1 Introduction

Configuration Management identifies the functional and physical attributes of components, software and related documentation at various points in time, including identifying links between items within a system. It provides a process for systematic control of changes to the identified attributes of items for the purpose of maintaining integrity and traceability throughout the Life Cycle. The separate elements of Configuration Management are:

- Configuration Management and Planning
- Configuration Identification
- Configuration Control
- Configuration Status Accounting
- Configuration Verification & Audits

2 Configuration Management and Planning

This element is the overall establishment of the documented controls and mechanisms for undertaking Configuration Management, which includes the elements of 'Configuration Identification', 'Configuration Change Control', Configuration Status Accounting' and 'Configuration Verification & Audits', as defined below. Configuration Management Planning includes the requirement to produce appropriate Configuration Management Plans.

Configuration Management and Planning in ActewAGL has been established within the group of Operational Technology applications, beginning with RIVA. RIVA is ActewAGL's asset management analysis and decision support software and has a range of functions, including its role as the forecasting tool for most of the significant capex and opex projections made by ActewAGL.

RIVA contains an inventory listing for all assets managed by ActewAGL, providing for an Asset Specific Plan (ASP) for each and every asset and documents the controls and mechanism for how the network assets relate to each other, now and plans for the future. A full description of the functionality of RIVA is in the document Asset Management System - Manual.

3 Configuration Identification

Configuration identification is the process of identifying a configuration item (a hardware and/or software/data product) and its defining attributes. The attributes of a configuration item are recorded in configuration documentation and base lined, with a formal

configuration change control process applied to manage changes to the configuration item's defining attributes and associated baselines. Configuration Identification is also managed in RIVA. Assets are individually identified by asset type, and asset types are configured in a hierarchy, which is based on asset type functionality. Each asset is given a number of defining attributes, such as serial number, date of commissioning and asset replacement cost. Some attributes are variable, such as asset health. A summary of these asset details is generated by RIVA and recorded in a document known as the Asset Specific Plan (ASP). An approved version of each ASP is stored as a PDF in ActewAGL's Information Management System. Changes to asset configuration are implemented in RIVA, resulting in a revised ASP, which after approval, is entered into the Information Management System. The revised ASP identifies and records changes to the asset configuration.

4 Configuration Control

Configuration control is a set of processes and approval stages required to manage any changes to a configuration item's defining attributes and to re-baseline them as necessary.

This Asset Management System Configuration Control describes the roles, responsibilities and processes for the effective and efficient control of ActewAGL's asset management system. It defines:

- **Who** is responsible for approving each type of change to the asset management system
- **How** changes are introduced into the asset management system in a controlled way

4.1 Responsibility for Approving Changes

In general, changes to the asset management system that may have a significant impact on the budget will need to be approved by the General Manager Energy Networks or the appropriate Branch Manager. Other changes need to be approved by the person responsible for ensuring that particular elements of the asset management system comply with relevant technical and financial parameters.

The approvers for each type of change to the asset management system are detailed in the table below.

Element	Approver1	Approver2	Approver3
Asset Management Policy	BM Asset Strategy	GM Energy Networks	CEO
Asset Management Strategy	BM Asset Strategy	GM Energy Networks	
Asset Management Objectives	BM Asset Strategy	GM Energy Networks	
Asset Management Improvement Plan	BM Asset Strategy		
Network Augmentation Plans	Strategic Planning Manager	BM Asset Strategy	
Two-year work task list	Primary Asset Manager or Secondary Systems Manager	BM Asset & Network Performance	GM Energy Networks
Maintenance Work Instructions	Primary Asset Manager or Secondary Systems Manager		
Riva Configuration Changes			
Asset Hierarchy Changes (Rollup To)	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	Asset Information Systems Manager
Riva Reports (other than ASPs)	Principal AMS Engineer	BM Asset Strategy	
Data Synchs	Asset Information Systems Manager		
Annual Activities	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	BM Asset & Network Performance
Riva Asset Type Changes			
Lifetime parameters	Analyst - Strategy	Primary Asset Manager or Secondary Systems Manager	
Cost parameters (e.g. unit costs)	Asset Information Systems Manager	Primary Asset Manager or Secondary Systems Manager	
Failure modes	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	
Maintenance Strategies	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	BM Asset & Network Performance
Asset Specific Plans			

Element	Approver1	Approver2	Approver3
Changes to the overall template	Principal AMS Engineer	BM Asset Strategy	
1 Purpose	Principal AMS Engineer		
2 Good Practice Alignment	Principal AMS Engineer		
3 Corporate Alignment	Principal AMS Engineer		
4 Scope - Asset Management Activities	Principal AMS Engineer		
5.1 Asset Classification	Primary Asset Manager or Secondary Systems Manager		
5.2 Brief Description	Primary Asset Manager or Secondary Systems Manager		
5.3 Asset Function	Primary Asset Manager or Secondary Systems Manager		
5.4 Asset Interfaces	Primary Asset Manager or Secondary Systems Manager		
5.5 Data Sources	Primary Asset Manager or Secondary Systems Manager		
5.5.1 Data Quality	Primary Asset Manager or Secondary Systems Manager		
5.6 Asset Base	(calculated value)		
5.7 Failure Modes	Primary Asset Manager or Secondary Systems Manager		
5.7.1 Deterioration Drivers	Primary Asset Manager or Secondary Systems Manager		
5.7.2 Failure Modes	Primary Asset Manager or Secondary Systems Manager		
5.7.3 Consequences	Primary Asset Manager or Secondary Systems Manager		
5.8 Service and Performance Requirements	Primary Asset Manager or Secondary Systems Manager		
5.8.1 Availability	Primary Asset Manager or Secondary Systems Manager		
5.8.2 Reliability	Primary Asset Manager or Secondary Systems Manager		
5.8.3 Capacity	Primary Asset Manager or Secondary Systems Manager		
5.8.4 Asset Utilization	Primary Asset Manager or Secondary Systems Manager		

Element	Approver1	Approver2	Approver3
5.8.5 Asset Criticality	Primary Asset Manager or Secondary Systems Manager		
5.8.6 Geographical Criticality	Primary Asset Manager or Secondary Systems Manager		
5.9 Asset Costs	BM Asset & Network Performance		
5.9.1 Planned Maintenance	BM Asset & Network Performance		
5.9.2 Unplanned Maintenance	BM Asset & Network Performance		
5.9.3 Condition Monitoring	BM Asset & Network Performance		
5.9.5 Asset Unit Costs	BM Asset & Network Performance		
5.10 Rationalisation Opportunities	Primary Asset Manager or Secondary Systems Manager		
5.10.1 Other Option	Primary Asset Manager or Secondary Systems Manager		
5.10.2 Feasibility and Business Case	Primary Asset Manager or Secondary Systems Manager		
5.11 Disposal Plan	Primary Asset Manager or Secondary Systems Manager		
5.12 Network Augmentation and Infrastructure Development	Primary Asset Manager or Secondary Systems Manager		
5.13.1 Projected Asset Count	calculated value, but forecast asset installations to be approved by Primary (or Secondary) Systems Branch Manager		
5.13.2 Age Profile of Assets	(calculated value)		
5.13.3 Health Profile	(calculated value)		
5.13.4 Maintenance Program	(calculated value)		

Element	Approver1	Approver2	Approver3
5.13.5 Replacement Program	(calculated value)		
5.13.6 Forward Cashflow	(calculated value)		
5.13.7 Health Profile at end of Regulatory Period	(calculated value)		
6 Planning and Costing Scenarios	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	
6.1 Minimum WLWS Cost	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	
6.2 Alternative Scenarios	Primary Asset Manager or Secondary Systems Manager	Principal AMS Engineer	
7. Performance Monitoring	Primary Asset Manager or Secondary Systems Manager		

4.2 Recording Approvals and Configuration Management

The process to record configuration changes and approval of these changes will be as follows:

1. Issue, bug or change opportunity identified
2. A manager assigns the issue to the person who will make the change
3. The proposed change is recorded in an issue tracking register by the person making the change, and given a unique reference number
4. Change is implemented on either the Riva Development Server or the Riva Planning Server.
5. Issue is tagged as “Complete” in the issue tracking system and Principal AMS Engineer advised.
6. Principal AMS Engineer advises Approvers who check that the fix works correctly and meets their requirements. They then tag the issue as “Approved” on the issue tracking system
7. Principal AMS Engineer advises Riva Administrator changes are approved and may be moved to the Production server
8. Changes moved to Production Environment and change/issue tagged as “Closed” by Riva Administrator on the issue tracking system

• Configuration Status Accounting – configuration status accounting is the process of recording and reporting on a configuration item and its defining attributes, as well as any associated configuration baselines, at any given moment in time.

• Configuration Verification & Audits – configuration audits can include functional and physical configuration audits. A functional configuration audit would ensure that any defined functional and performance attributes of a configuration item have been

implemented/achieved, while a physical configuration audit ensures that a configuration item is installed in accordance with the requirements of its approved supporting documentation.

5 Approval and review of this document

This document is authorised by the ActewAGL General Manager – Energy Networks, and shall be reviewed every 2 years.

6 Appendix – Status of Asset Specific Plans

Asset Class	Asset Specifc Plan	Updated in AIMS	Valid till
Distribution	Batteries/Chargers Report – SM1135	11/12/2014	11/12/2016
Distribution	LV Switchboards – SM1101	11/12/2014	11/12/2016
Distribution	Distribution LV Switchboard Assembly – SM1134	11/12/2014	11/12/2016
Distribution	Earthing (Distribution) – SM1136	11/12/2014	11/12/2016
Distribution	Enclosure		
Distribution	Ground Transformers – SM 1131	11/12/2014	11/12/2016
Distribution	HV Switchboards		
Distribution	LV Pillars		
Distribution	OH Lines and Pole Hardware – SM1127	11/12/2014	11/12/2016
Distribution	OH Services – SM1181	16/01/2015	16/01/2017
Distribution	Air Insulated Switchgear – SM1102	11/12/2014	11/12/2016
Distribution	Pits		
Distribution	Pole Substations – SM11129	13/01/2015	13/01/2017
Distribution	Poles – SM1126	11/12/2014	11/12/2016
Distribution	Ring Main Units – SM1133	21/10/2015	21/10/2017
Distribution	UG Cables – SM1128	7/12/2015	7/12/2017
Metering	Metering LV Current Transformers		
Metering	Metering Types1-7		
Metering	Testing Equipment & Instrumentation – SM11124	11/12/2014	11/12/2016
Metering	TNSP Metering		

Secondary Systems	Communication – SM1196	14/11/2014	14/11/2014
Secondary Systems	Protection – SM11128	28/11/2014	28/11/2016
Secondary Systems	SCADA - SM11101	14/11/2014	14/11/2016
Transmission	Structures – SM11125	11/12/2014	11/12/2016
Transmission	Transmission Conductors		
Zone Substations	Air Insulated Equipment		
Zone Substations	Backup Power Supply		
Zone Substations	Cable Equipment (Zones) – SM1104	7/12/2015	7/12/2017
Zone Substations	Capacitor Banks		
Zone Substations	DC Supply (Zones)		
Zone Substations	Earthing (Zones) – SM1136	11/12/2014	11/12/2016
Zone Substations	Gas Insulated Modular Switchgear		
Zone Substations	General Items (Zones)		
Zone Substations	HV Switchboard Assembly		
Zone Substations	Other Transformers – SM1113	11/12/2014	11/12/2016
Zone Substations	Power Transformer Assembly – SM1114	11/12/2014	11/12/2016
Zone Substations	Towers and Structures (Zone)		