

# MATT ACTON, PMP

## Utility Telecommunications & Operational Technology Specialist

Matt assists clients with an informed blend of strategy, asset management, operations, program management across utility, telecommunications and technology industries.

Matt has 15 years' experience in the asset management, planning, engineering and project management of Operational Technology (OT) and private telecommunications networks for utilities.

Matt has led multi-disciplinary teams and consulting engagements such as enterprise and technology strategy, investment planning, regulatory submissions and operational efficiency initiatives including digital transformation, organization design, utility modernization, workforce automation, SCADA, IT/OT convergence, packet network upgrades and private LTE 4G/5G advisory.

## CAREER PROFILE

### Director and Principal Consultant

#### A2A Consulting | 2019 – Present

Independent consultant providing strategic asset management, technical advisory, engineering and project management of private telecommunications networks, IT and OT systems for utilities, transport, energy and mining.

### Regional Business Line Manager

#### Burns & McDonnell | 2018 – 2019

Business development, strategy consultancy, project and resource management for the California region with Engineer News Record's #1 power design firm in the US.

### Engineering Manager

#### Eversource Energy | 2016 – 2018

Management of a team of engineers, projects and contracts responsible for the strategy, planning, engineering and safe delivery of private utility telecommunications networks for New England's largest Investor-Owned Utility.

### Engineering Team Leader

#### Western Power | 2012 – 2016

Management of a team of engineers responsible for the asset management of telecommunications networks, metering, protection and control systems providing the safe, reliable and efficient operations and management of the Transmission and Distribution electricity networks and Energy Market.

### Senior Engineer

#### Western Power | 2008 – 2012

Developed asset strategies and sponsorship of the work program for OT, telecommunications and control systems.

### Engineer

#### Titan ICT | 2007 – 2008

Contracted engineer to configure, commission, manage and maintain the SCADA and telecommunications infrastructure on Western Power's Distribution Automation deployment.

## SERVICES

- ▶ Strategy & asset management
- ▶ Technical advisory
- ▶ Operational efficiency
- ▶ Project & resource management
- ▶ Engineering & design

## QUALIFICATIONS

- ▶ Bachelor of Engineering (Electronic & Communications) w/ Honors
- ▶ Bachelor of Science (Computer Science)

## REGISTRATIONS

- ▶ Project Management Professional (PMP)
- ▶ Six Sigma Yellow Belt

**15** YEARS OF EXPERIENCE

# STRATEGY & ASSET MANAGEMENT

## Telecommunications Strategy

US Department of Energy

Portland, Oregon | 2019 - 2020

Provided consultant services to develop a telecommunications network strategy and asset management framework for the Pacific Northwest's Transmission System Operator Bonneville Power Administration (BPA).

Matt's collaborative approach included a current and future state analysis via stakeholder interviews, documentation and site audits, facilitating working groups with senior management and presenting industry best practices to agree a vision, roadmap and implementation plan.

## Telecommunications Strategy

Eversource Energy

Hartford, Connecticut | 2016 - 2017

Developed the ten-year enterprise strategy for Eversource's private telecommunications infrastructure, including tri-state core and wireless networks. Business requirements were gathered and rigorous business case for change was prepared with contracted support; including proposals for transformative change from a network operator to a strategic asset manager, and the technology evolution to a converged digital platform including optic fiber, core packet networks, Advanced Metering Infrastructure (AMI), 4G LTE and Digital Mobile Radio networks.

## Telecommunications Strategy

Western Power

Perth, Western Australia | 2016

Matt managed the development of Western Power's ten-year telecommunications network strategy in partnership with an engineering consultant. The project included the gathering of business requirements, assessment of current state and industry trends, gap and options analysis and recommendations for technology and investment.

## Regulatory Proposal for OT Investments

Western Power

Perth, Western Australia | 2012 - 2016

Managed the development of the SCADA and telecommunications capital and operating expenditure proposals for the regulatory rate case submission. The submission included project overviews, risk assessments and financial forecasts.

## IT / OT Convergence Strategy

Western Power

Perth, Western Australia | 2015

Following a significant corporate restructure, Matt managed the development of a five-year IT/OT convergence strategy. The project included the gathering of business requirements, assessment of current state and industry trends, gap and options analysis and recommendations.

## Technology Investment Proposals

Western Power

Perth, Western Australia | 2012 - 2017

Sponsored, developed and/or managed various OT scope of work, business cases and Board submissions including automated plant deployments, wireless data networks, SCADA and telecommunications technology refresh, analog Land Mobile Radio (LMR) network augmentation and replacement, AMI, IT/OT environments and software application refresh including Distribution Management (DMS), Energy Management (EMS), Network Management (NMS) systems and data historian.

## OT Asset Management Plan

Western Power

Perth, Western Australia | 2012 - 2017

Coordinated and contributed to an annual State of the Network report and Asset Management Plan for Western Power's electrical protection, telecommunications and SCADA infrastructure including EMS, DMS, AMI, NMS. The documents included an overview of the profile and condition of the existing asset bases, risk assessment and proposed capital investment plan and recurring operating expenditure.

## 'Bushfire Mitigation Plan'

Western Power

Perth, Western Australia | 2013 - 2017

The subject matter expert for the implementation and ongoing continuous improvement of Western Power's Bushfire Management Plan including revised electrical protection settings during fire risk days and providing telemetry for conductor clashing detection.

## ISO 55000 Asset Management Review

Western Power

Perth, Australia | 2016

Domain expert in the review of the protection, SCADA and telecommunications asset management framework with respect to the ISO/PAS 55000 Strategic Asset Management Framework.

## Automation Planning, Business Case & Project Sponsor

Western Power

Perth, Australia | 2011 - 2018

Sponsored, developed and/or led Executive and Board approvals for the deployment of Distribution Automation across the Western Power Distribution network. The business case included risk assessment and strategic options analysis to manage compliance risk and reduce the duration of extended supply outages including traditional poles and wires investment and Grid Modernization initiatives.

## Distribution Automation Expansion

Western Power

Perth, Australia | 2011 - 2018

Sponsored, scoped, estimated and led approvals for the expansion of 30 licensed VHF / UHF private radio sites for Distribution Automation and Land Mobile Radio applications across urban and rural Western Australia.

## Central Business District (CBD) SCADA Replacement and Expansion

Western Power

Perth, Australia | 2011 - 2018

Sponsored, scoped, estimated and led approvals for the replacement and expansion of a private optic fiber network

around Perth to extend remote monitoring and control capabilities to downtown substations and replace obsolete Remote Terminal Units. Matt initiated establishing a packet switched core network, modem and RTU replacements with minimal outages and cost.

## Smart Grid Strategy

Western Power

Perth, Australia | 2011 - 2012

Domain expert to working groups and cost estimates as subject matter expert for the development of Western Power's Smart Grid strategy and proposal including Distribution Automation and AMI.

## 'Self-Healing' Distribution Networks Planning & Business Case

Western Power

East Perth, Australia | 2011

Sponsored, developed obtained regulatory and internal approvals for the software development of a 'self-healing' advanced centralized automation scheme for the distribution power grid.

Matt was seconded to the Network Control Center to document requirements, use cases and cost/benefits. The project and business case were presented to the 2012 Energy Networks Association conference.

# TECHNICAL ADVISORY

## Distributed Energy Resources Telecommunications & Control Standards Victorian State Government Melbourne, Victoria | 2019

Developed a 'market scan' report on the technical standards and application-layer protocols available for DER, including IEEE 2030.5, MODBUS, DNP3, AS 4755.2 and IEC 61850. Matt combined his technical knowledge with research and investigation to provide technical and product information technical standards.

## Wireless Technology Evaluation Black Hills Energy Rapid City, South Dakota | 2019

Developed a financial model for an 800 MHz LMR and 900 MHz private LTE evaluation for 'mission critical' operational use cases including Push-to-Talk and SCADA.

## Advanced Metering Infrastructure Investigation & Audit Ameren St Louis, Missouri | 2019

Developed the documentation framework and coached the contracting engineering team to investigating the performance of Ameren's Illinois AMI deployment and requirements of planned Missouri deployments.

## Radio Frequency Spectrum Evaluation Exelon Corporation Washington, DC | 2018 - 2019

Forecast the voice and data demand for the Distribution network and operational workforce applications. Matt evaluated Radio Frequency spectrum holdings and the market across Exelon's service territory via queries of the FCC database and relationships with spectrum asset owners. The evaluation report and executive presentation included both narrowband and broadband spectrum options, to assess technology including 4G LTE.

## Secondary SCADA Telecommunications Network Analysis Northern Powergrid Newcastle-upon-Tyne, United Kingdom | 2018

Provided analysis and direction for the wireless data networks used for secondary power distribution SCADA applications including Real-Time operations, power flow analysis, load and

condition monitoring. Matt collated user requirements and asset information, to provide a roadmap for wireless technology including the assessment of private 4G LTE and mesh Radio networks.

## Grid Modernization Eversource Energy Boston, Massachusetts | 2017 - 2018

Developed the high-level wireless telecommunications architecture and cost estimates for Massachusetts and Connecticut Distribution Grid Modernization proposals, including participation in project working groups.

## Telecommunications Cyber Security Compliance Audit Eversource Energy Boston, Massachusetts | 2017 - 2018

Managed the audit of private telecommunications infrastructure compliance obligations including Critical Infrastructure Protection (CIP) for cyber security.

## Shared Telecommunications Network Representative Eversource Energy Hartford, Connecticut | 2016 - 2018

Represented Eversource Energy's operating companies on the New England Shared Telecommunications Network committee, facilitating the secure and reliable transmission of SCADA data across New England to the Independent System Operator (ISO).

## Utilities Technology Council (UTC) Regional Chair (New England) Eversource Energy Hartford, Connecticut | 2016 - 2018

Represented New England utilities as regional chair for the UTC member utilities, including managing financial performance and member satisfaction for the region.

## Land Mobile Radio Replacement Eversource Energy Hartford, Connecticut | 2016 - 2018

Revised the delivery strategy to recover and accelerate implementation and re-negotiated 450 MHz frequency license purchases for the replacement of Connecticut's Land Mobile Radio network with Tier II Digital Mobile Radio.

# OPERATIONAL EFFICIENCY

## Telecommunications Project Management Office (PMO)

Eversource Energy

Boston, Massachusetts | 2018

Developed the Request for Proposal and evaluated professional services responses to establish a PMO dedicated to the implementation of the Operations Telecommunications Strategy. Once awarded, Matt managed the initiative to completion, facilitating enterprise-wide knowledge gathering and approval Project Management Body of Knowledge (PMBok) aligned deliverables.

## Business Transformation – ‘Operations’ Stream Initiatives

Western Power

Perth, Western Australia | 2016

Led the identification and planning of SCADA and telecommunications related initiatives in response to significant corporate operational efficiency targets. In partnership with a ‘big 4’ management consultant, initiatives were quantified, prioritised and presented to Business Transformation and Information & Communication Technology (ICT) working groups.

## Network Risk Management Tool – Bayesian Belief Network Models

Western Power

Perth, Western Australia | 2015 - 2017

Domain expert for the development of Bayesian Belief networks to model the probability of failure of telecommunications assets.

## ‘Integrated Solution for Asset Management’

Western Power

Perth, Australia | 2012 - 2017

Domain expert for the rationalization and update of Western Power’s Asset Management Systems including Enterprise Resource Planner and Geographical Information System. Input to the project included establishing SCADA and telecommunications equipment hierarchies, nameplates and attributes, condition monitoring and map layers.

## ‘Equipment and Works Data Warehouse’

Western Power

Perth, Australia | 2012 - 2017

Domain expert for the centralization and visualization of equipment and operations assets and performance including data cleansing and developing an automated reporting suite.

## ‘Enhanced Planning & Works Management’

Western Power

Perth, Australia | 2012 - 2017

Domain expert as SCADA and telecommunications representative for the enterprise adoption of a ‘Project Management Book of Knowledge’ aligned framework including forecasting and scheduling resources.

# PROJECT & RESOURCE MANAGEMENT

## Microwave Radio Replacement

Pacific Gas & Electric

[Sacramento, California | 2018](#)

Provided management and oversight of the planning phase for the replacement of three backhaul microwave links serving voice and data communications to the Stanislaus Hydro-Electric generator facility.

## Utility Telecommunications Projects

San Diego Gas & Electric

[San Diego, California | 2018 - 2019](#)

Talent, resource and business development manager of contracted engineering teams for telecommunications projects including:

- Circuit switched (SONET, SDH) to packet network (MPLS/IP, MPLS-TP) upgrades
- Overhead and underground Optic fiber deployments
- Private LTE
- Wildfire mitigation (Fallen Conductor protection using Synchrophasors).

## Utility Grid Modernization Projects

Southern California Edison

[Los Angeles, California | 2018 - 2019](#)

Talent, resource and business development manager of contracted engineering teams for Southern California Edison's

telecommunications and Grid Modernization projects including data circuit provisioning and upgrades, Distribution Volt-VAR Control deployments and Net Energy Metering application processing.

## Utility Telecommunications Projects

Pacific Gas & Electric

[San Francisco, California | 2018 - 2019](#)

Talent, resource and business development manager of contracted engineering teams for telecommunications projects including circuit provisioning, Wide Area Network expansion, microwave radio replacements and upgrades.

## Transmission & Distribution Projects

Eversource Energy

[Hartford, Connecticut | 2016 - 2018](#)

Telecommunications engineering manager providing supervision and approvals for various New England Transmission and Distribution projects including protection relay replacement, optic fiber deployment and Distributed Energy Resource interconnections (direct transfer trip).

Matt reviewed and approved telecommunications designs, material purchases, frequency acquisition and delivery plans.



# ENGINEERING & DESIGN

## Distribution Energy Resource (DER) IEEE 2030.5 Simulation

A2A Consulting

Perth, Australia | 2020

Implemented an IEEE 2030.5 protocol simulation and testing environment for DER and Distributed Energy Resource Management (DERMS) use cases using a raspberry PI computer and open-source software applications.

## WiSun Mesh Radio Pilot

Western Power

Perth, Australia | 2013 - 2014

Provided technical oversight, direction and analysis for the trial and evaluation of RF mesh radios for Distribution Automation.

## Distribution Automation Reliability Engineering

Western Power

Perth, Australia | 2009 - 2014

Developed the scopes of work and managed contractors for the Distribution Automation program including distribution system planning, reliability modelling, data queries, telecommunications Front-End Engineering & Design (FEED) and cost estimates.

## Underground Switchgear Automation & Cable Fault Indicator Engineering Standard

Western Power

Perth, Australia | 2009 - 2010

Developed an engineering and design standard for the telemetry and remote control of Schneider Ring Main Unit switchgear and existing Cable Fault Indicators from the Distribution Management System (DMS). The standard included preferred SCADA and telecommunications equipment, standard drawings, default configuration, compatible units, field staff training, equipment register and Geographical Information System (GIS) updates.

## Overhead Switchgear Automation & Telemetry Engineering Standards

Western Power

Perth, Australia | 2009 - 2010

Maintained and improved the engineering and design standards for the telemetry and remote control of recloser switchgear, capacitor banks and regulating transformers. The standard included preferred SCADA and telecommunications equipment, standard drawings, default configuration, compatible units, field staff training, equipment register and Geographical Information System (GIS) updates.

## Data Concentrator RTU Removal

Western Power

Perth, Australia | 2007 - 2008

Proposed, engineered and implemented a project to retire data concentrator RTUs and migrate Distribution Automation data circuits directly to the DMS via DNP3. The project included SCADA database and configuration, drawing markups, SCADA outage planning, salvage, installation and commissioning of equipment in rural substations and radio bases.

## 'Rural Power Improvement Project' Distribution Automation Deployment

Western Power

Perth, Australia | 2007 - 2008

Provided the RTU and DMS configuration, testing, pre-commissioning and operational support for the installation of new Distribution Automation equipment including Reclosers and Load Break Switches in rural Western Australia. Matt was also the point of escalation for field commissioning, including remote troubleshooting and on-site testing.

## Kalbarri Wind Farm Distributed Generation

Titan ICT Consultants

Perth, Australia | 2007 - 2008

Developed the control interface, RTU and DMS configuration, testing and commissioned the SCADA for a recloser used for the interface between a 1.6 MW wind farm and rural Distribution network.