



Working with Auckland Transport

Minimum Engagement Criteria (MEC) for Technology

Date: 29/8/2019

Next Review Date: 29/8/2020

Version: 1.0



Background

Auckland Transport (AT) is a Council Controlled Organisation which employs a variety of technology solutions. In the course of selecting and implementing this technology it is important for AT to maintain consistence and control of those technologies to provide a secure cost-effective service to Auckland.

Purpose

The purpose of the MEC is to set standards for vendors, partners and affiliates to provide technology services and equipment to Auckland Transport

Auckland Transport's Business Technology Office (BTO) is the authoritative group for the creation, amendment and approval of all technology related policies and standards. The MEC is a summary collection of those standards and policies and serves as a quick reference to some of the main points of engagement. In nearly all cases more detailed review of the relevant policy or standards is required.

Scope

These criteria apply to all technology services and solutions in place, proposed and planned by both Auckland Transport and any third party providing those services and solutions

- a. All Cloud and hybrid services
- b. Software as a Service (SaaS)
- c. On premise

Auckland Transport recognises that solutions presented as; wholly managed, or software as a service may not comply completely with the standards set out in this document. Auckland Transport will not compromise standards that may diminish the return to the public of Auckland, nor will it place at material risk the confidentiality, availability or integrity of the services it provides.

If a provider or vendor believes that their proposal supports the objectives of these standards but differs significantly in their delivery, an application for exception may be submitted to the BTO. The submission will be reviewed against the following criteria:

1. Strategic value - the proposal will reshape AT's technology strategy
2. Operational mass – The scale of the solution is such that it can sustain its' own support services and infrastructure without materially reducing the value of the business case
3. Demonstrable alignment – equivalent or better standards can be mapped without materially reducing the value of the business case
4. Targeted value – The proposal targets a niche requirement and has negligible impact on support, costs or architecture



Strategic Requirements

When evaluating services and solutions Auckland Transports Business Technology team will assess the suitability based on the following four key decision points. These are in no priority and each is weighted according to the use case

- a. Business Agility
- b. Cost
- c. Business continuity
- d. Security

Each proposed solution will be assessed against these requirements for its relative strengths and weaknesses. Each requirement encompasses a broad range of decision points e.g. technical debt, support costs, speed to deploy, response velocity etc.



Contents

Minimum Engagement Criteria (MEC) for Technology.....	1
Date: 29/8/2019.....	1
Next Review Date: 29/8/2020	1
Background	2
Purpose.....	2
Scope	2
Section One	5
1. Service Management.....	5
2. Transition to Production.....	5
3. Service Level Agreements.....	6
4. Documentation.....	6
5. Disaster Recovery	7
6. Operating Systems	7
7. Virtual Machine Sizing	7
8. Network.....	7
9. Security.....	7
10. Deployment Environments.....	8
11. Product Management	8
12. Integration.....	9
13. Workflow	9
14. Database	9
15. Data Policies	10
16. Analytics.....	10
17. Risk and Compliance.....	11
18. Architecture.....	11
19. MVP, PoC, PoV	11
20. Supported Browsers	12
21. Mobile Applications.....	12
22. Immutable Infrastructure.....	12
23. Development and Proof of Concept	12
Section 2	13
Breach of Policy	13
Related Documents.....	13
Related Legislation	14
Revision History	14
Authority	14
Appendices.....	15



Section One

1. Service Management

- a. AT uses ServiceNow as its technology service management tool. All incidents, changes and requests must be tracked through AT's ServiceNow. Third parties may integrate with AT's ServiceNow (at their cost) or manually synchronise tickets if they wish to maintain their own service management queues.
 - i. **Incident Management** - Incidents must be logged and tracked in AT's ServiceNow
 - ii. **Change Management** - Only AT's Change Board may approve changes to Pre-production and Production environment.
 - iii. **Change Control** – Proposed changes must be lodged with the AT Change Team at least two days before the AT Technical Advisory Board (TAB) meets
 - iv. **Peer Review** – All changes must be Peer Reviewed by a member of the AT Operations Team not already involved with the work.
 - v. Invoices for support will only be approved with a breakdown of work with an associated AT incident, request or change number.

2. Transition to Production

- a. A service or solution is in "Production" when it is in use either directly or indirectly by AT customers or supporting an AT business process or function.
- b. Documentation required is detailed in section 4 Documentation
- c. Transition to production must be approved by the Technical Advisory Board
- d. A "soft launch" has the same requirements as a full transition
- e. A "Feature Flag" release has the same requirements as a full transition
- f. SaaS and Hybrid solutions are required to meet the same production standards as on premise solutions. Where a support feature is managed by the solution provider the transition documentation must reference the support contract clause that meets the requirement.
- g. Evergreen products in addition to complete documentation must manage a formal change and adoption process including internal market segmentation, persona development and ring deployment.



- a. Each service or solution must have an SLA that matches AT's business operations.
- b. This will include:
 - i. Availability expressed as a percentage calculated monthly
 - ii. Response time to a notified incident
 - iii. Communication frequency
 - iv. Restore Time Objective (RTO)
 - v. Restore Point Objective (RPO)

4. Documentation

- a. Documentation will comply with AT's record management policies and use Auckland Transport templates.
- b. Solution documentation will at a minimum include:
 - i. Service Desk Guide
 - ii. Operations guide
 - iii. Implementation guide
 - iv. As built
- c. If Azure DevOp's (ADO) is being used for deployment and ongoing backlog management system documentation may be maintained in an ADO wiki or AT's Git in Markdown
- d. Evergreen solutions also require the following:
 - i. Product road map
 - ii. User persona's
 - iii. User market segmentation



5. Disaster Recovery

- a. Auckland Transport makes a clear distinction between Disaster Recovery, High Availability and Business Continuity:
 - i. **DR**- The ability to restore a service within SLA's
 - ii. **HA- Hot/Warm/Cold** inherit resilience of a service. HA may be applied to the entire service or targeted vulnerabilities
 - iii. **Business Continuity**- business contingency planning in the event of an outage
- b. The requirement for DR or HA is determined by the contracted service level agreements. Where possible the service should be immutable in production to facilitate automated deployment. The intent is that issues are resolved by redeploying last known good.
- c. DR from media must be tested to operation every six months.
- d. HA fail over and fail back must be tested every six months
- e. Business Continuity planning will be reviewed every 12 months in cooperation with the Auckland Transport service manager

6. Operating Systems

- a. AT will support the following server operating systems:
 - i. Windows server 2016
 - ii. Windows Server 2019
 - iii. RedHat 7.6, 7.7

Commented [R(1): Do we want to add a couple of Linux OSs?

7. Virtual Machine Sizing

- a. Cloud virtual machines will be size to the minimum specification required to run the service.
- b. Machines may be set to auto-scale if load is variable

8. Network

- a. IP addresses ranges are managed allocated by AT network team
- b. Physical network infrastructure must be approved by the AT Network team before design approval
- c. IaaS IP addressing must be assigned by DHCP

9. Security

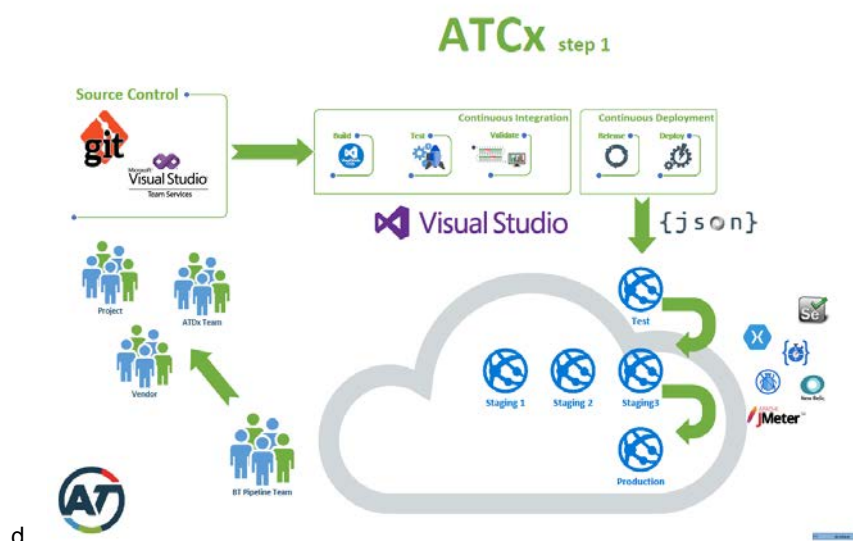
- a. Technologies and architectural patterns not already in use in Auckland Transport must be reviewed and approved by AT's Security team before acceptance.
- b. Advice should be sought from the AT Security team on currently acceptable standards and protocols for data in motion and data at rest.
- c. Authentication that is not Microsoft Active Directory or MS Azure AD integrated must be approved by the Security team.
- d. Third party use of AT cloud services is only permissible with Microsoft 365 Guest Accounts. The accounts are not provided by AT.
- e. External facing services must not connect directly to internal services



- f. Unencrypted protocols are not permitted outside of AT's corporate network and must not cross security boundaries

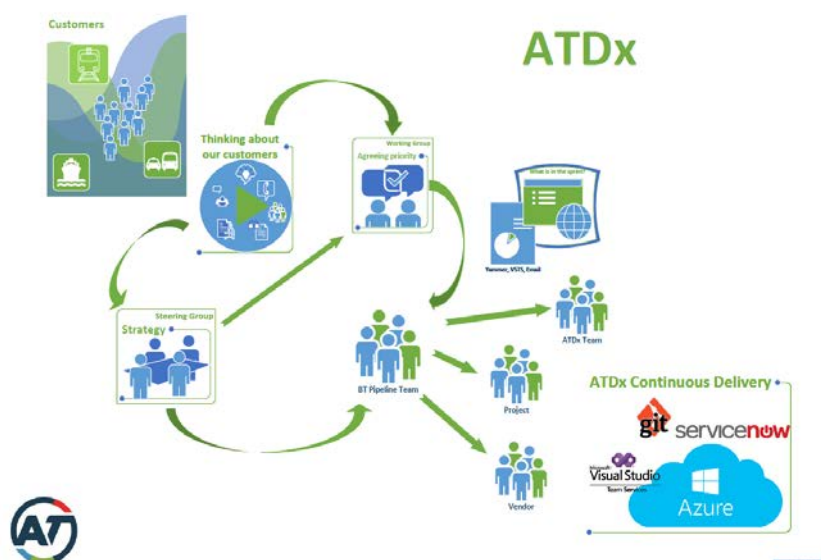
10. Deployment Environments

- a. Code repositories must be in either AT's Azure DevOp's (ADO) or Git
 - i. <https://aucklandtransport.visualstudio.com>
 - ii. <https://github.com/AucklandtransportCode>
- b. Auckland Transport's Digital delivery is built on Microsoft Azure DevOp's:
 - i. Backlogs, sprint/iteration planning, tasks, Kanban,
 - ii. CICD
 - iii. Release
 - iv. Test Management
- c. Detailed standards and processes on AT's Application Lifecycle Management and the use of ADO are in the ALM Wiki



11. Product Management

- a. Backlogs are prioritised by a stakeholder representative working group
- b. Prioritised work is scoped by at Business Technology technical team
- c. AT's Product Management is a part of the wider ATDx program



12. Integration

- Azure Logic App's are AT's standard for integration in Azure
- On-premise integration will use Kafka unless directed by the AT Architecture team
- Personal workflow services (such as 365 Flow) will not be used for corporate applications.

13. Workflow

- Business logic workflow may use the following:
 - Logic App's
 - Nintex
 - Dynamics CRM
 - Personal workflow services (such as 365 Flow) will not be used for corporate applications

14. Database

- MS SQL Server 2012
- MS SQL Server 2014
- MS SQL Server 2016
- Azure Cosmos DB
- Azure SQL Database
- SQL Server on Virtual Machines
- SQL Data Warehouse
- Azure Database Migration Service
- Azure Cache for Redis



15. Data Policies

- a. Business system/applications must meet the requirements of the Information & Records Management compliance as per PRA2005, and IRM standard as issued by the Chief Archivist.
- b. Documentary information must integrate/interface with AT's auto-classification system to enable the tagging (incl. retention tagging) of documents.
- c. External contractors working for or on behalf of AT must have a contractual Recordkeeping clause so that all records created and maintained when carrying out any AT business be captured and maintained in AT's prescribed documentary information system. For project information that is 365 Project Online and Fulcrum

16. Analytics

- a. All reporting and visualisations must be developed using AT's enterprise reporting tool; Power BI. No new development is to be done in AT's legacy reporting tool – Business Objects without the approval of the Information Delivery Manager. This approval must be gained upfront.
- b. Peer Review – All designs and development, both data model and visualisation must be peer reviewed by a member of the Information Delivery team not already involved with the work. Solution design must be reviewed and approved before development starts.
- c. Any associated ETL work must also be reviewed and signed off by the Data Delivery team before UAT starts.
- d. UAT must not start until all development has been reviewed and approved.
- e. Any development done outside of the Information Delivery team will not be supported or maintained by the central Information Delivery team until the 'Handover to BAU' process has been completed and signed off for approval by either the Information Delivery Tech Lead or the Information Delivery Manager. Any development that does not meet the Enterprise Reporting and Analytics standards will need to be redeveloped using AT best practice and standards and will not be deployed to the Production environment until that standard is met.
- f. Documentation will comply with AT's record management policies and use Auckland Transport templates.
- g. Solution documentation will at a minimum include:
- h. SSaS Peer Review template (if using SSaS for data model)
- i. Reporting Peer Review template
- j. BAU Handover template (if development is to be supported and maintained by Enterprise Reporting and Analytics team)
- k. Upon commencement of a Reporting, Analytics or Advanced Analytics project, the contractor or PM must make themselves and their project known to the Information Delivery Manager with delivery timelines so



that appropriate resource can be made available to that project for the review processes.

- I. Any support time required by the Information Delivery team up until it is accepted into BAU will be charged to the corresponding Project or WRB code.

17. Risk and Compliance

- a. Computer operation controls are in place
- b. To be demonstrated that a regular software patching process is in place
- c. Demonstrate the approval process for elevated access to systems
- d. Data centre physical security controls are in place
- e. Evidence that only authorised personnel have data centre access
- f. System development life cycle (SDLC) controls are in place
- g. Evidence that a process for developing software includes a life cycle (Plan/Build/Test/Deploy/Maintain)
- h. Cloud Risk Assessment has been done (e.g. Completing the DIA [Department of Internal Affairs checklist]
 - i. Evidence that the checklist has been completed and sent back to AT
- i. Internet exposed services must pass a security penetration test in pre-production and production.
- j. Once these criteria have been accepted by the supplier/vendor they should then become part of the MSA (Master Services Agreement)
- k. The vendor has implemented a security framework (e.g ISO270001, NIST, PCIDSS or a similar accepted framework)
- l. Logical access controls over applications, data and supporting infrastructure exist
- m. Demonstrated by way of a Policy or similar document that defines how the organisation manages access to systems that store AT data
- n. Program change management controls exist
- o. Demonstrated by a Change Control Policy or evidence of a formal change control process

18. Architecture

- a. Solution designs must comply with standards outlined and referenced material in this document.
- b. Where available Designs must use approved AT blueprints
- c. All designs must be approved by the Design Review Board (DRB)
- d. Submissions to the DRB must be made by an Auckland Transport Solution Architect

19. MVP, PoC, PoV



- a. **Minimum Viable Product (MVP)** is a fully functioning supported production system and is subject to the same standards and reviews as a full production system.
- b. An MVP is characterised by a limited feature set that allows an early release to market. The solution must have testing and support structures no less than a fully featured product
- c. **Proof of Concept (PoC)** Must never be released into production and must not be used as the start point for a production build.
- d. A PoC serves only to validate a design and must be decommissioned after successful design review by the BTO
- e. **Proof of Value (PoV)** extends a PoC to validate the problem statement of a business case. The same rules apply for PoV's as PoC's

20. Supported Browsers

- a. Microsoft Internet Explorer 11
- b. Microsoft Edge

21. Mobile Applications

- a. Must be available in both the Apple App Store and the Google Play Store
- b. Only the AT Online team will have access to the store.
- c. All releases will be managed by the AT Online team

22. Immutable Infrastructure

- a. All server implementations must be automated using the current AT standard image unless approved by the BTO
- b. Each service will have three environments:
 - i. Test – manual deployment from template – Change control not required
 - ii. Pre-production – CICD deployment with manual intervention – Change notification required
 - iii. Production – CICD deployment, immutable infrastructure IaC – Standard Change approval required

23. Development and Proof of Concept

- a. Development work should be carried out in a suppliers' own environment at their cost.



- b. Where integration or AT specific services are necessary development or a PoC can be carried out in AT's Azure Development subscription. At the end of the initial development the environment will be deleted.
- c. To move a service from development to test a template is taken of the solution and deployed manually into an environment in the Test subscription. Change control is not required.
- d. Before moving to test a cost for budget must be approved

24. Geographical Information Systems (GIS)

- a. Auckland Transport has a GIS team responsible for managing, maintaining, developing and presenting all geospatial data.
- b. All geodata must be approved and managed by AT's GIS team
- c. Google Map's is not to be used
- d. ESRI is AT's standard for geospatial information
- e. FME is AT's standard for GIS data integration

25. Directory Authentication

- a. Applications must be able to authenticate to Azure Active Directory (AAD)
- b. The prime source for groups and security is currently Microsoft Active Directory (AD) but AT's strategic direction is to move to Azure AD.

Section 2

Breach of Policy

- a. Breach of this policy may result in disciplinary action, including where appropriate, summary dismissal (as set out in Auckland Transport's Discipline and Dismissal Policy).
- b. Failure to comply by a supplier, contractor or vendor to Auckland Transport may result in the termination of any related agreement or initiate a contracted dispute process.
- c. Failure to meet these standards in a Request for Information (RFI) or a Request for Purchase or other tender or procurement process may immediately disqualify any proposal.

Related Documents

- a. ATDx



- b. AT.ALM Wiki
- c. Information and Records Management Policy
- d. Information and Records Management Standards
- e. IT Access Policy
- f. Mobile Device Guidelines
- g. Mobile Device Policy
- h. Procurement Policy
- i. DIA Cloud Risk Assessment Process

Related Legislation

- a. Public Records Act 2005
- b. Privacy Act 1993
- c. Local Government and Official Meetings Act 1987

Revision History

Date	Authored by	Approved by	Ver.	Notes
		EGM Technology	1.0	Initial draft
		EGM Technology	1.0	Final version

Authority

Owner (contact for updates, clarity etc)	ELT (Roger Jones)
Stakeholders for consultation	All Auckland Transport Business Units
Authorised by	Chief Executive



Name	Shane Ellison	Signature	
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Appendices