

Government Enterprise Architecture



GEA-NZ v3.1
Context Document
Approved June 2015



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Document

Purpose

This document describes an overview of the Government Enterprise Architecture for New Zealand (GEA-NZ), and includes the result of the GEA-NZ v3.1 updates to v3.0.

Scope

This document provides a description of the GEA-NZ structure and artefacts. It focuses on describing the motivations for constructing and using the GEA-NZ, such as the directives of the Government of New Zealand, good practices performed in other government administrations and good practices performed in commercial enterprises.

This document does not include the reference taxonomies and architecture or the use of software tools to construct and manage GEA-NZ v3.1 models.

References to related documents are contained within the artefact sections for each dimension of the architecture. This version of the GEA-NZ framework references a number of artefacts that have yet to be developed or published. They are included for completeness and to ensure a degree of future-proofing of the GEA-NZ library.

Structure

This document includes:

- The purpose of GEA-NZ
- The changes to the previous version
- A description of the GEA-NZ structure and its dimensions
- For each dimension:
 - o Description of the GEA-NZ v3.1 reference model
 - o Context and relationship towards other GEA-NZ dimensions
 - o How to use the reference model
 - o Description of the artefacts
- Other Cross-Cutting Components

Audience

The intended audience of this document is (but not limited to):

- Agencies' CxOs, and functional leads
- Agencies' Enterprise and Solution Architects
- Business partners involved in development and delivery of business and technology solutions
- Government Programme Directors and Government Project Managers

- Business and IT Managers
- Business and System Analysts

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Version

Document v3.1 – produced by the Department of Internal Affairs.

Approval

This document has been approved as a framework for the New Zealand All-of-Government Enterprise Architecture by Government Enterprise Architecture Group.

Acknowledgements

The GEA-NZ framework is developed and maintained by the Government Enterprise Architecture team, part of the System Transformation Team in the Department of Internal Affairs.

In addition, feedback was received from a number of staff from various agencies, which was greatly appreciated.

Table of Contents

Document.....	3
Purpose	3
Scope 3	
Structure	3
Audience	3
Authors	4
Version	4
Approval.....	4
Acknowledgements	4
Table of Contents.....	5
Executive Summary.....	7
GEA-NZ Framework Overview	8
GEA-NZ Purpose.....	8
GEA-NZ Structure.....	8
GEA-NZ Primary Outcomes.....	9
GEA-NZ Dimensions	10
Strategy, Investment, and Policy	12
Description	12
Context and Relationships.....	12
Artefacts	13
Governance and Performance.....	15
Description	15
Context and Relationships.....	15
Artefacts	16
Business	17
Description	17
Context and Relationships.....	17
Business Sub-dimensions and Artefacts.....	18
How to use the GEA-NZ Business Reference Model	22
Data and Information	23
Description	23
Context and Relationships.....	23
How to use the GEA-NZ Data and Information Reference Model	23
Artefacts	24
Application and ICT Services.....	25
Description	25
Context and Relationships.....	25
How to use the GEA-NZ Application and ICT Service Reference Model.....	26

Artefacts	26
Infrastructure	27
Description	27
Context and Relationships	27
How to use the GEA-NZ Infrastructure Reference Model	28
Artefacts	28
Security and Privacy	29
Description	29
Context and Relationships	30
How to use the GEA-NZ Security and Privacy Reference Model	30
Artefacts	32
Considerations	33
Standards	34
Description	34
Context and Relationships	34
Artefacts	34
Cross-Cutting Groups and Artefacts	35
Capabilities	35
Reference Architectures and Patterns	36
Programmes and Projects	37
Appendix A – GEA-NZ v3.1 AoG Structure and Artefacts Overview – To be updated with v3.2	38
Appendix B – GEA-NZ v3.1 Agency Structure and Artefacts Overview	40
Appendix C – GEA-NZ History	41
Pre GEA-NZ	41
GEA-NZ v1.0	41
GEA-NZ v2.0	41
GEA-NZ v2.1	41
GEA-NZ v3.0	42
GEA-NZ v3.1	42
Appendix D – GEA-NZ v3.1 Colour Palette	43

Executive Summary

One of the primary goals of Enterprise Architecture is to ensure that investments in technology, information and process development are cost-effective, sustainable and aligned with the organisation's strategic goals. GEA-NZ is a framework to support ICT enabled transformation across government.

GEA-NZ supports GCIO functional leadership and is mandated for use across the New Zealand Government sector.

GEA-NZ provides tools for enabling collaborative cross agency projects, better public services, and enabling sharing of services and information, in a customer centric way.

GEA-NZ helps in enabling the following four primary outcomes:

- **Success of Government Goals and Objectives**— Provide a consistent view and accurate information within and across agencies to support planning and decision making
- **Functional Integration** – Facilitate and encourage interoperability within and across agencies and between programs and enhanced services by the use of Enterprise Architecture standards
- **Authoritative Reference** – Provide an integrated, consistent view of strategic goals, business services and enabling technologies across the entire organisation, including programs, services, and systems
- **Resource Optimisation** – Provide a harmonised and consistent view of all types of resources in each functional area, program, and system area

GEA-NZ Framework Overview

GEA-NZ Purpose

The GEA-NZ Framework is designed to be applied at agency, sector and all-of-government levels.

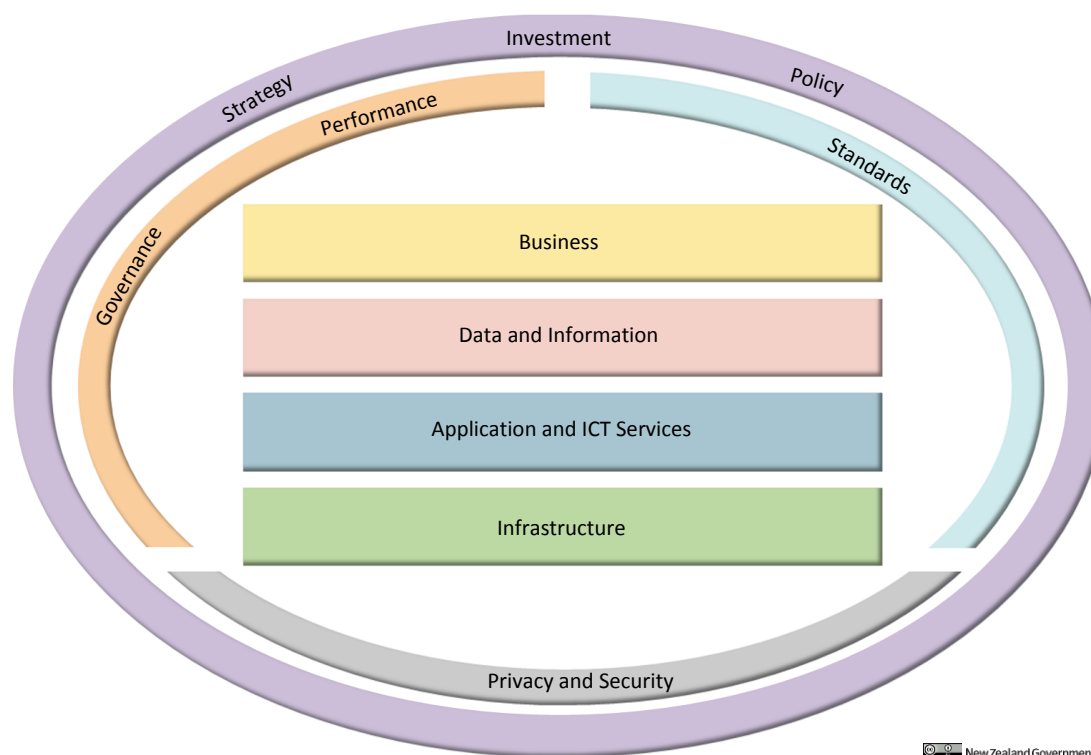
At all-of-government level, the Government Enterprise Architecture team will maintain a high-level model of Government services and their supporting business capabilities and information and technology assets, to inform system-wide transformation and as a means of identifying new potential common capabilities.

At the more detailed agency and sector levels, GEA-NZ offers:

- a "starter framework" to help agencies that are redeveloping their Enterprise Architectures to align agency modelling to sector and all-of-government views
- an outline of the major components and relationships that agencies and sectors should model to maintain an efficient and effective ICT asset base and to inform business transformation initiatives
- a set of reference models and patterns, focussing on common elements such as authentication and data interchange
- an ICT standards base

GEA-NZ Structure

The GEA-NZ v3.1 Framework resets the summary view of the Government Enterprise Architecture to a more traditional layering as shown below. It is structured around eight top level dimensions. Each dimension has a reference model which has a set of All of Government (AoG) artefacts, and agency related artefacts. These artefacts include information sets, categorisation taxonomies, and tools.



 New Zealand Government

GEA-NZ Primary Outcomes

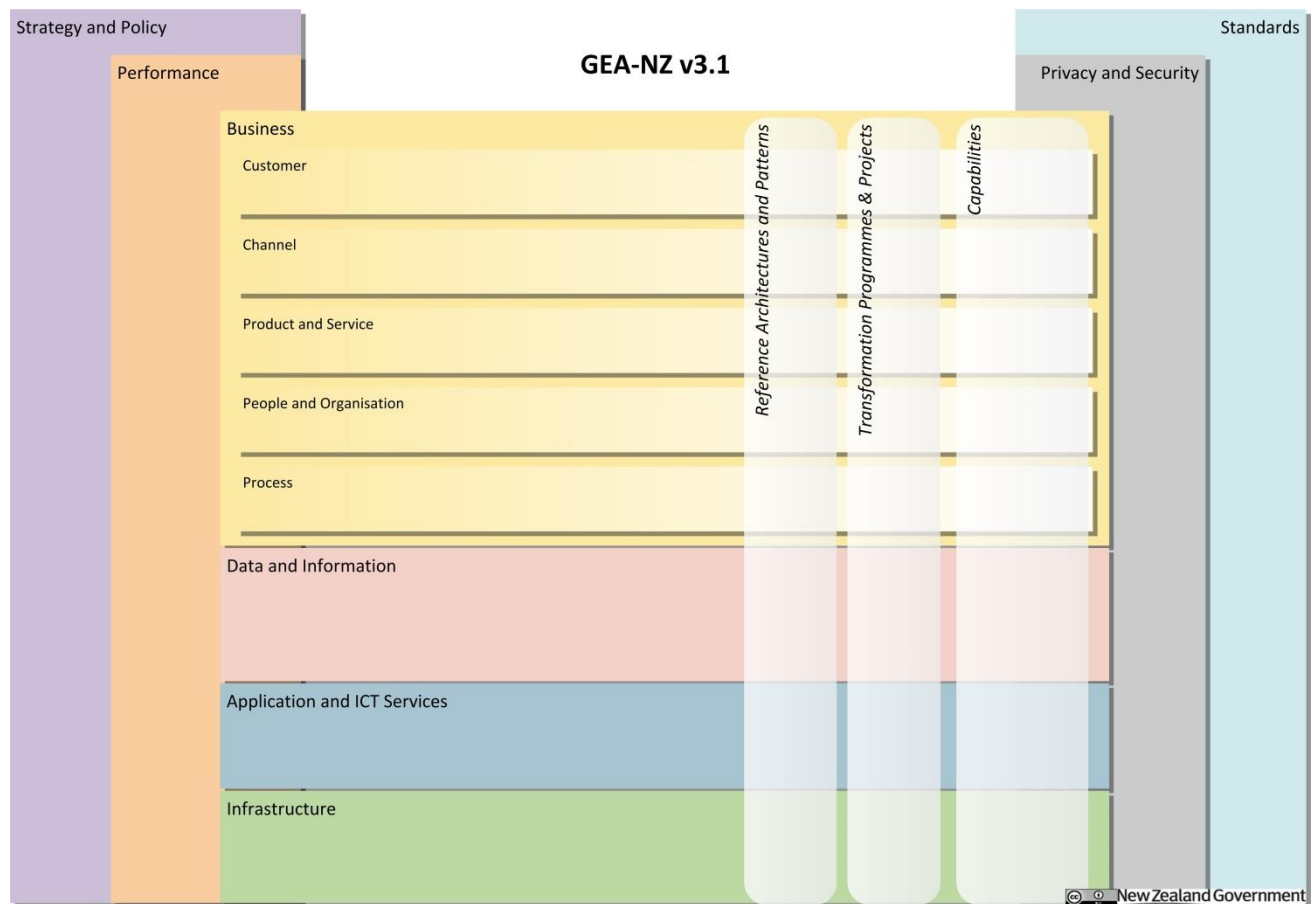
GEA-NZ Dimensions

The GEA-NZ Framework is structured into eight top level dimensions. They represent the main focus areas of an organisation and are there to allow specific artefacts, viewpoints, and relationships to be captured in a consistent way.

If we look at it from a New Zealand citizens' and organisations' point of view, they will interact with the government through government services. Those services are built on the business capabilities which use data and information assets. These capabilities are categorised into business areas, lines of business and business functions. This guides agencies and government through their transformation, analysis, design and reengineering activities. Data governance and quality assurance will guide agencies with their data (re)use and share of information. The technology assets (applications, ICT services and infrastructure) are categorised in a common way and will result in cost benefits by sharing, decrease redundancies and remove duplications. All of this is guided by security and privacy standards and other standards. To improve agencies' performance, governance and cost benefits, there will be measurements in place. All this is influenced by the strategic goals, objectives and policy. The Dimensions are described in the table below:

Dimension	Description
Strategy, Investment, and Policy	The GEA-NZ Strategy, Investment, and Policy reference model is designed to provide linkage between the architecture and strategic goals, policies and investments.
Governance and Performance	The GEA-NZ Governance and Performance reference model describes governance models and performance frameworks and related metrics that apply across other dimensions of GEA-NZ.
Business	A Business reference model is a generic representation of the business processes, products and services that deliver the outputs of the organisation. The Business reference model emphasises aspects of customer centricity and channel shift that are objectives of the ICT strategy and Action Plan.
Data and Information	GEA-NZ Data and Information primary purpose is to discover, describe, manage, share and reuse information within and across agencies. It describes best practices and artefacts that can be generated from the data architectures. It also provides a data and information governance framework, and maturity assessment.
Application and ICT Services	GEA-NZ Application and ICT Services describes the business applications, including 'Software as a Service', that support the business processes of the enterprise. It includes core business applications, COTS corporate applications and end user computing applications.
Infrastructure	GEA-NZ Infrastructure describes the technology infrastructures that support the application and business processes of the enterprise. It may include insourced, outsourced or cloud capabilities.
Security and Privacy	GEA-NZ Security and Privacy does not prescribe a "new" approach, but rather gives an enterprise architecture context to the relevant security and privacy requirements for government agencies, and other guideline artefacts, that form the eco-system (or life-cycle) for ICT security and privacy.
Standards	GEA-NZ Standards categorises the information and technology standards base for the NZ government. The existing standards base incorporating the eGovernment Interoperability Framework (e-GIF) standards is structured according to GEA-NZ v2.0. In future Government Enterprise Architecture will restructure the standards base mapped to the GEA-NZ dimensions i.e. Business, Data and Information, Application and ICT Service, Infrastructure, and Security and Privacy.

The following diagram shows an alternative view of GEA-NZ v3.1 emphasising the sub dimensions of the business dimension and the cross-cutting components of the architecture.



The GEA-NZ Business dimension has five sub-dimensions as described in the table below:

	Sub-dimension	Description
Business	Customer ¹	GEA-NZ Customer focuses on the customer aspects of the business, those people and organisations receiving services from government, e.g. personas, segmentation, and customer experiences.
	Channel	GEA-NZ Channel focuses on the channels customers use to obtain services from agencies.
	Product and Service	GEA-NZ Product and Service contains a description the products and services government delivers internally and externally.
	People and Organisation ¹	GEA-NZ People and Organisation focuses on agency, sector and government structure and on third-party stakeholders in the delivery of government services.
	Process	GEA-NZ Process contains a description of the processes agencies and government use to deliver products and services.

¹ GEA-NZ distinguishes parties in the role of a customer from parties internal to government agencies or their supply chains.

Strategy, Investment, and Policy

Description

The GEA-NZ Strategy, Investment, and Policy Reference Model is designed to provide linkage between the architecture and strategic goals, policies and investments.

At an All-of-Government level, it sets out government goals, objectives and roadmaps to achieve the AoG vision. These are defined in the *Government ICT Strategy and Action Plan to 2017* and *Better Public Services Results*. By creating a consolidated view of government transformation, we identify new opportunities to improve and share government services across agencies and drive efficiency, effectiveness, and system transformation across government.

At an agency level, it sets out the agency's goals and objectives defined in the agency's *Four Year Plan*, *Information Systems Strategy Plan*, and *Statement of Intent*. These will drive the change initiatives within the agency. Agencies should map their programmes directly against the ICT Strategy and Action Plan and the Better Public Services Results to identify where they can adopt common capabilities, share services and collaborate with other agencies to improve the overall customer experience, the services and reduce costs.

Context and Relationships

Strategy, Investment, and Policy	sets the strategic objectives that drives the governance models and performance frameworks	Governance and Performance
	sets the objectives and roadmaps for business improvement and transformation	Business
	sets goals for data and information quality, governance and sharing	Data and Information
	sets strategic context for the evolution of the business application portfolio, including efficiencies through sharing, reuse and the adoption of common capabilities	Application and ICT Services
	defines the guidelines for infrastructure asset management and efficiency through sharing, reuse and the adoption of common capabilities	Infrastructure
	sets the expectations for security and privacy	Security and Privacy
	sets the expectations for standards use and adoption across government	Standards

Artefacts

Strategy, Investment, and Policy	Artefact	Description
	All of Government	
	Government ICT Strategy and Action Plan	This is the guiding document for government ICT strategy for delivery of integrated digital services, information assurance and the realisation of the economic potential of the government's information holdings.
	Better Public Services Results	A set of 10 goals for improving public services across New Zealand.
	Government Common Capability Roadmap	The prioritisation and sequencing of government common capabilities produced by the GCIO.
	Action Plan / Government Common Capability Matrix	Traceability from the Action Plan to government common capabilities produced by GCIO.
	Better Public Service / Government Common Capability Matrix	Traceability from better public services to government common capabilities.
	Architecture Governance Recommendations	Architecture governance recommendations the implementation of controls for the design of all architectural components and activities, to ensure effective evolution of architectures within the agency. It sets out compliance with internal and external standards and regulations, and guidelines that ensure accountability for the architectural solutions within and across agencies.
	Four Year Plans and Excellence Horizons	Central agencies' view across all agencies' Four Year Plan, Excellence Horizon Programme and transformation programmes.
	AoG Risk and Assurance Framework	GCIO Assurance artefacts including operational and project assurance frameworks.
	Agency and Sector	
	Agency 4 Year Plan	4-Year Plans set out what the agency is seeking to achieve and how it plans to achieve this. It sets out how the agency intends to address challenges facing delivery of its strategy, including how it will manage within existing funding levels. https://www.ssc.govt.nz/four-year-plans
	Agency Change Portfolio	This is the pipeline of potential change initiatives that are being contemplated at agency and sector level.
	Agency Investment Plans	These are the planned investments, prioritised and drawn from the change portfolio, which the agency/sector intends to undertake within its planning horizon.
	Business Motivation Model	The BMM captures business requirements across different dimensions to justify what the agency is aiming to achieve, how it plans to get there, and how it assesses the result. It will provide a scheme and structure for developing, communicating, and managing business plans.
	Agency Information Systems Strategic Plan (ISSP)	The ISSP is the information technology component of the overall business strategy. It should cover the following aspects: people, data, policies, processes and systems. http://www.ssc.govt.nz/node/5860
	Agency ICT roadmaps	Agency roadmaps guided by ISSP, Strategy and Action Plan, and internal ICT initiatives.

	Agency Architecture Governance Framework	Architecture governance framework sets out the controls for the design of all architectural components and activities, to ensure effective evolution of architectures within the agency. It ensures the compliance with internal and external standards and regulations, and ensures the accountability for the architectural solutions within and across the agency.
	Legislation – Common and Agency Administered	List of acts that are administered by the agency.
	Agency Policy and Governance	List of relevant agency policies and related governance structures, including Investment, risk and assurance, enterprise programme management (EPMO), and enterprise design authority.
	Agency Risk and Assurance Framework	Agencies are required to maintain an enterprise risk and assurance model and an associated hierarchy of risk registers.

Governance and Performance

Description

The GEA-NZ Governance and Performance Reference Model describe governance models and performance frameworks and related metrics that apply across other dimensions of GEA-NZ v3.1.

At an All-of-Government level, it provides targets and performance measures that quantify the intended action plan and BPS benefits. It also includes the capability maturity models that are provided for agencies to measure and improve their performance.

At an agency level, it sets out the improvement plan and Governance and Performance measurements to optimise their services towards internal and external customers, to improve their collaboration with other agencies and 3rd parties, and to improve their information and technology assets.

Context and Relationships

Governance and Performance	Describes the governance models and performance frameworks for measuring strategic goals and programme benefit realisation	Strategy, Investment, and Policy
	provides measurements and controls for business services, processes, capabilities, and business change	Business
	provides measurements and controls for data and information quality, governance and sharing	Data and Information
	provides measurements and controls for application cost benefits, sharing, reuse and effectiveness	Application and ICT Services
	provides measurements and controls for infrastructure cost benefits, sharing, reuse and effectiveness	Infrastructure
	provides measurements and controls to determine effectiveness of security and privacy	Security and Privacy
	provides measurements for standards effectiveness and adoption across government	Standards

Artefacts

Governance and Performance	Artefact	Description
	All of Government	
	AoG Enterprise Architecture Maturity Assessment tool	Enterprise Architecture (EA) maturity assessment guides agencies to improve their enterprise architecture capability to the level needed to achieve their strategic goals.
	Action Plan Governance and Performance Targets	GCIO and Cabinet targets for government ICT transformation.
	Better Public Services Governance and Performance Results	Better Public Services (BPS) results are State Services Commission targets for improving public service outcomes.
	Benchmarking Administrative and Support Services	Benchmarking Administrative Support Services (BASS) is an annual Treasury benchmarking service to support agencies to make value for money assessments, with target-setting, and the tracking of improvements over time.
	Governance and Performance Improvement Framework	Governance and Performance Improvement Framework (PIF) is a SSC review of agency's fitness-for-purpose today and for the future using the PIF Framework. It looks at the current state of an agency, then how well placed it is to deal with the issues that confront it in the medium-term future. It looks at the areas where the agency needs to do the most work to make itself fit-for-purpose.
	Technology Performance Framework	BASS and PIF are coarse-grained and we need more fine grained ICT specific measurements.
	Agency	
	Agency Enterprise Architecture Maturity Assessment results and improvement plan	Results of the Enterprise Architecture Maturity Assessment and a plan to improve the maturity level of EA within the agency.
	Agency Performance Improvement Model	The agency SSC PIF report and associated modelling supporting performance improvement. Includes the Four Year Excellence Horizon.
	Agency Specific Customer Performance Measurements	Agency customer related targets which need to be met.
	Agency Specific Action Plan Performance Targets	Action plan agency related targets which need to be met.
	Agency Specific Better Public Services Performance Targets	Better Public Services (BPS) agency related targets which need to be met.
	Agency Benchmarking Administrative Support Services Report	The agency annual Treasury benchmarking (BASS) report supporting the agency to make value for money assessments, with target-setting, and tracking of improvements over time.
	Agency Data and Information Quality Measurements	Agency related data and information quality targets.
	Agency Application Portfolio Risk / Currency Heat Map	An overview of effectiveness and sustainability risks across the agency's application portfolio.
	Agency Technology Performance Measurements	Agency related technology performance targets.

Business

Description

A GEA-NZ Business Reference Model is a generic representation of the business processes, products and services that deliver the outputs of the organisation. In GEA-NZ v3.1, the Business reference model emphasises aspects of customer centricity and channel shift that are objectives of the ICT Strategy and Action Plan.

At an All-of-Government level, the GEA-NZ Business reference model describes the customers and the different channels they use to interact with the government, the common products and services provided to the citizens, and the different roles, skills and processes needed to support all of the above. By describing the common business capabilities the GEA-NZ promotes cross-government collaboration and enables business and IT leaders to discover opportunities for cost savings and new business capabilities that help to achieve strategic objectives.

At an agency level, the GEA-NZ Business reference model describes the agency's customer personas and customer experiences, how the customer interacts with the agency, and what products and services the agency provides to their customers.

The GEA-NZ Business Reference Model includes a Business Reference Taxonomy that is used to classify products and services, and the business functions that are supported by the business processes. It is used for identifying opportunities for cost reduction, collaboration, shared services, and solution reuse in agency IT portfolios within and across agencies to support citizen centric service transformation, efficiency, and effectiveness gains.

Context and Relationships

Business	describes the business services, processes, and capabilities to support the strategic goals and objectives	Strategy, Investment, and Policy
	sets out the business capabilities required to support governance models and effective business performance management	Governance and Performance
	sets the business requirements for data and information, and identifies redundancy, duplication and gaps	Data and Information
	sets the business requirements for application and ICT services, and identify redundancies and opportunities for reuse and sharing	Application and ICT Services
	sets the business requirements for infrastructure, and identify redundancies and opportunities for reuse and sharing	Infrastructure
	identifies the business elements that require security and privacy protection, and the business requirements for identity and access management	Security and Privacy
	Sets the business requirements that drive development and scope of corresponding standards	Standards

Business Sub-dimensions and Artefacts

Customer

The GEA-NZ Customer sub-dimension focuses on the customer aspects of the business, those people and organisations receiving services from government, e.g. personas, segmentation, and customer experiences.

Business Customer	Artefact	Description
	All of Government	
	AoG Customer Personas and Profiles	The customer personas and profiles are defined by R9 (business) and R10 (individual) and provide a means of cross agency alignment within the context of these result areas. (R9 and R10)
	AoG Customer Experience and Usability	Customer experience and usability is the sum of all experiences a customer has with government and this over the duration of the relationship with the customer. This includes awareness, discovery, attraction, interaction, purchase, enrol, use, cultivation and advocacy.
	Organisation and Individual Customer Identity and Access Management	Addresses the mission-critical need to ensure correspondence of identity and appropriate access to resources across business and technology while meeting privacy and other compliance requirements.
	Agency	
	Agency Customer Personas and Profiles	The agency specific customer personas and profiles are defined by the agency and will provide an oversight of the different kind of customers for that agency.
	Customer Experience	Customer experience is the sum of all experiences a customer has with the agency and its services, and this over the duration of their relationship with the customer. This includes awareness, discovery, attraction, interaction, purchase, enrol, use, cultivation and advocacy.
	Customer / Channel Matrix	Shows the relationship between the agency's customers and the channels.
	Customer / Product and Service Matrix	Shows the relationship between the agency's customers and their products and services.

Channel

The GEA-NZ Channel sub-dimension focuses on the channels customers use to obtain services from agencies and the linkage between business strategy and channel strategy (shift). It includes:

- Agency and AoG channels for customer interaction including face to face, call centre, web based, digitally assisted, third party mediated, and direct business to government.
- The range of devices under the control of the customer such as personal computers, tablets, smart phones, phones etc.

Business Channel	Artefact	Description
	All of Government	
	AoG Channel Strategy	A co-ordinated cross-agency channel strategy for government that covers business and citizen services across all channels including digital/mobile, assisted, face-to-face, call centre, etc.
	AoG Channel Types	The channel types defined by R9 (for business) and R10 (for individual persons) will be provided as a means of cross agency alignment.
	AoG Channel Catalogue	An AoG channel catalogue with channels such as www.govt.nz.
	Agency	
	Channel Catalogue	An agency specific channel catalogue.
	Channel / Product and Service Matrix	Shows the relationship between the agency's channels and their product and services.

Product and Service

The GEA-NZ Product and Service sub-dimension describes the products and services government delivers internally and externally.

Understanding the products and services, and being able to provide access to them in a customer centric way is critical to the delivery of service transformation across government.

Strategic management of government products and services becomes more critical as public and private sector third parties start to act as delivery partners – either directly or as components for new innovative products and services of their own.

Business Product and Service	Artefact	Description
	All of Government	
	Business Reference Taxonomy	Business reference taxonomy defines the business terminology, and provides a coherent description and conceptual structure of the functions and services for New Zealand.
	Agency	
	Product and Service Catalogue	An agency's product and services catalogue.
	Product and Service / Organisational Structure Matrix	Shows the relationship between the agency's product and services and their organisational structure. I.e. which department is responsible for which product or services.
	Product and Service / Process Matrix	Shows the relationship between the agency's product and services and their processes. I.e. which process produces, handles, changes which product or services.

People and Organisation

The GEA-NZ People and Organisation sub-dimension focuses on agency, sector and government structure and on third-party stakeholders in the delivery of government services.

Business People and Organisations	Artefact	Description
	All of Government	
	New Zealand Public Sector	The structure of New Zealand's Public Sector, this includes the public services, state services, state sector and public sector and the government sectors and clusters. https://www.business.govt.nz/procurement/pdf-library/agencies/NZ-Public-Sector-agencies-list.pdf
	New Zealand Industry Sectors	This provides an overview of all the industry sectors that make up New Zealand's economy. This is provided by MBIE. http://www.mbie.govt.nz/what-we-do/business-growth-agenda/sectors-reports-series
	Agency	
	Delivery Partners	Shows an overview of the agency's vendors and business partners.
	Agency Organisational Structure	Shows an overview of the organisational structure of the agency.
	Workforce Plan	Describes how the agency's workforce composition and development will evolve in response to agency strategy and transformation.

Process

The GEA-NZ Process sub-dimension describes the processes agencies and government use to deliver products and services. It includes processes, activities, events, tasks and coordination that will be needed to support generic agency functions as well as federated service delivery, and customer centric service delivery.

Agencies need to be able to orchestrate customer centric processes which requires common standards and approaches to both processes and information.

Business Process	Artefact	Description
	All of Government	
	Accelerated Delivery Methodology	The Accelerated Delivery Methodology (ADM) improves the collaboration between agencies, the speed and quality of projects and will decrease costs of large scale business cases and funding requirements. The ADM was developed by DIA for all-of-government projects.
	Business Process Management Maturity Assessment Tool	Business Process Management (BPM) maturity assessment tool and guidelines for using a subset of the BPMN to describe high level business processes consistently across government. Note: Full BPMN would be used where processes are to be automated using standards such as BPEL (Business Process Execution Language).
	Agency	
	Business Process Management	Business process management (BPM) is a management discipline that focuses on improving agencies performance by managing and optimising their business processes. It enables agencies to be more efficient, more effective and more capable of change than a functionally focused, traditional hierarchical management approach. These processes impact the cost and revenue generation of an agency. The Agency BPM should include: <ul style="list-style-type: none"> * Library of current state business processes * Project based library of future state processes * Process / Business Application matrix
	Process Inventory	Inventory of all the business processes within the agency and the interactions between processes, products, services, information and infrastructure.
	BPM Maturity Assessment Results and Improvement Plan	Results of the Business Process Management Maturity Assessment and a plan to improve the maturity level of Business Process Management within the agency.

How to use the GEA-NZ Business Reference Model

One of the primary purposes of enterprise architecture is to support and improve agency wide strategic planning and decision making. The GEA-NZ Business reference model is designed to provide agencies with a standard means to categorise their capital investments and operating costs, identify areas for collaboration, consolidation and reuse based on the business functionality being delivered, and help improve the overall architecture to better enable mission outcomes. The GEA-NZ Business reference model also provides decision support capabilities to stakeholders and different levels of staff, within and across agencies.

Identifying opportunities to share services across government

The GEA-NZ Business reference model allows agencies and the GCIO to identify projects and investments across agencies that supports a common business purpose, highlighting opportunities for collaboration and reuse of shared services across government.

Reducing costs by eliminating duplication within the organisation

The GEA-NZ Business reference model benefits the agency at all organisational levels, from executives to developers.

Executives and Managers: Use of standardised business taxonomy enables executives and managers to see the gaps and redundancies within their agency. These gaps and redundancies may be opportunities for cost savings and new business capabilities that help achieve the organisation's strategic objectives.

Portfolio Managers: Use of the GEA-NZ Business reference model as a framework for portfolio management can help align projects and investments to the business needs of the agency. It can also help guide the development of business cases to request and justify funding for future development and maintenance of programs, systems, and applications.

Project Managers: During the concept and planning phase of a project, the GEA-NZ Business reference model allows project managers to identify current business capabilities and determine if or how the proposed project fits into the existing enterprise architecture. Project managers can also use the GEA-NZ Business reference model to streamline common business processes to reduce or avoid cost, improve cycle time, and improve customer satisfaction and value. Additionally, application Governance and Performance may be enhanced by finding better ways of doing business, such as sharing data sources, and developing common data retrieval and storage services.

Developers: From a development perspective, the GEA-NZ Business reference model will enhance the ability for project teams to work towards a common, shareable solution for satisfying business needs. The costs associated with maintaining duplicative applications and services can be reduced by developing sharable services that can be used by more than one application or organisation. Integrated service delivery approaches can also reduce the burden on the public by collecting data once and sharing it among systems, thereby reducing the burden on users of those systems.

Data and Information

Description

The GEA-NZ Data and Information Reference Model primary purpose is to discover, describe, manage, protect, share and reuse information within and across agencies and their business partners. It describes best practices and artefacts that can be generated from the data architectures. It also provides a data and information governance framework, and maturity assessment.

The Data Reference Taxonomy provides a standard means by which data may be described, categorised, and shared, and it facilitates discovery and exchange of core information across organisational boundaries.

Context and Relationships

Data and Information	provides a framework for trusted data and information that can be used for strategic decision making	Strategy, Investment, and Policy
	provides a framework for trusted data and information that can be used to improve governance models and business performance management	Governance and Performance
	provides the data and information structures that support business services, processes, capabilities, information sharing, and reuse	Business
	provides the authoritative data and information structures to be used by application and ICT services	Application and ICT Services
	provides the data and information requirements for technology and infrastructure services	Infrastructure
	provides the data and information requirements and models needed for security and privacy	Security and Privacy
	sets the data and information requirements that drive development and scope of corresponding standards	Standards

How to use the GEA-NZ Data and Information Reference Model

The key goals of the GEA-NZ Data and Information reference model are:

- Pursuing the goal of Open Data by improving discovery, access, and sharing
- Identifying authoritative sources of information across government
- Using data and information to meet customer, agency and government needs
- Supporting common and shared services and aiding cross-agency collaboration
- Positioning agencies to operate in a global information environment
- Developing shared vocabularies to facilitate reuse of data across communities
- Providing governance and performance measures to ensure the trust, accountability, and security of data being shared or exchanged
- Reducing cost and customer impact from the redundant collection of citizen and organisation data

Compare Data Sources across Agencies

The GEA-NZ Data Reference Taxonomy identifies data categories, regardless of usage context. Used in combination with the GEA-NZ Business reference model taxonomy, we can classify the data that is managed in a given data source by the goals, objectives or business context in which that data is used. Classifying a set of data sources by the Data and Business taxonomies produces a data set that can be searched to determine, for example, which data sources contain a common data class but use it for different business contexts. For a large set of data sources, that search capability saves considerable time over manually examining each data source to see if it contains what is required.

Artefacts

Data and Information	Artefact	Description
	All of Government	
	AoG Information Asset Catalogue	This is a future catalogue of important information assets required, and produced across government. This will be based on the agencies Information Asset catalogues being developed using the Information Asset Catalogue Template v2.0 and associated guideline.
	Data and Information Reference Taxonomy	The data and information reference taxonomy defines a standard means by which data may be described, categorised, and shared, and it facilitates discovery and exchange of core information across organisational boundaries. Includes a conceptual data model which is a simple abstract data model used for communicating ideas to a wide range of stakeholders.
	Data and Information Quality Framework.	Future framework to insure the quality of the data and information within and across agencies.
	Party Domain Model	The party domain model describes the management of the core identity, relationships and channel preferences of a Party, where a Party is defined as an individual or organisation with which NZ Government interacts or about which NZ Government holds information.
	Data and Information Governance Maturity Assessment Tool	Data and Information Governance maturity assessment tool and guidelines are focussed on the use, management and quality of data and information within an agency. It is a low-cost tool, developed by DIA, to help agencies assess current level of maturity and to develop appropriate structures and processes towards the next level of maturity.
	Agency	
	Information Asset Catalogue	This is a catalogue of important information assets required or produced by an agency in order to deliver its products and services to customers developed using the Information Asset Catalogue Template v2.0 and associated guideline.
	Data and Information Maturity Assessment Results and Improvement Plan	Results of the data and information governance maturity assessment and an optional plan to improve the maturity level of data and information governance within the agency

Application and ICT Services

Description

GEA-NZ Application and ICT Services Reference Model describes the business applications, including 'Software as a Service', that support the business processes of the enterprise. It includes core business applications, COTS corporate applications, software components (websites, databases, email, and other supporting software) and end user computing applications.

At an All-of-Government level, the GEA-NZ Application and ICT Services reference model facilitates a common understanding of application assets and ICT services, identifying opportunities for sharing, reuse, and consolidation or renegotiation of licenses. It also assists the GCIO assurance function by identifying application assets that will require maintenance or renewal within the business planning horizon.

At an agency level, the GEA-NZ Application and ICT Services reference model describes the application assets and ICT services of the agency, and helps application portfolio management. Mapping their current and planned Information Systems to the Application and ICT Services Reference Taxonomy categories should help agencies and sectors identify opportunities for sharing, reuse, and consolidation or renegotiation of licenses.

The GEA-NZ Application and ICT Services Reference Taxonomy provide the basis for categorising applications and their components. It categorises software that supports business. It does not include operating systems that are used to operate hardware, as these are contained in the IRT. It also does not contain mission specific categorisations for systems because that information can be obtained from mappings to the BRT.

Context and Relationships

Application and ICT Services	represents a key mechanism for realising strategic goals, through adoption of agile core business applications and industry standard corporate support functions	Strategy, Investment, and Policy
	provides the ICT services that enables governance and performance measurement and control, and offers opportunities to improve business efficiency through sharing and reuse	Governance and Performance
	provides the application and ICT services that support business services, processes, capabilities, information sharing, and reuse	Business
	sets requirements and provides the tools to manage, model, structure, share, and exchange data and information	Data and Information
	provides the application and ICT service requirements for technology and infrastructure services, and supporting applications for infrastructure management (e.g. CMDB)	Infrastructure
	provides the application and ICT service controls needed to support security and privacy requirements	Security and Privacy
	sets the application and ICT service requirements that drive development and scope of corresponding standards	Standards

How to use the GEA-NZ Application and ICT Service Reference Model

Look for redundancy to find opportunities to share, reuse, or consolidate information systems

By mapping agency systems and application components to the Application and ICT Services Reference Taxonomy, a searchable dataset is produced so that manual information gathering is not needed. This analysis may result in consolidating instances of the same application, consolidating licenses into an agency-wide license when they are up for renewal, selecting a single new agency-wide solution that will be hosted in the cloud, or even changing business processes to enable sharing a system.

Look for reusable solutions, applications, and ICT services to meet a business need

By using the same taxonomies to map both project needs and existing solutions across the reference models, extensive and comprehensive information can be searched easily to identify opportunities for reuse or sharing. Then the solution team, including the business owners, can use industry standard methods to perform an objective, data-driven analysis and determine whether an existing solution is a sufficiently good fit for the environment and purpose, and if so, which one.

Artefacts

Application and ICT Services	Artefact	Description
	All of Government	
	AoG Business Application Asset Catalogue	Future catalogue of the significant business applications across government taken from the collective agency business application catalogues. This includes template and guidelines.
	Application and ICT Service Reference Taxonomy	The application and ICT service reference taxonomy provides the basis for categorising applications and their components.
	Common Services and API Catalogue	Catalogue of the common services and APIs across government. This includes template and guidelines.
	Agency	
	Application Portfolio / Catalogue	Inventory and management of applications and ICT services used by the agency. At minimum this should be based on GCIO template that captures classification, ownership, maintenance risks, operational cost, investment plan etc.
	Total Cost of Ownership Models	Calculation of the total cost of ownership of application assets and services over a given period (usually 5-7 years) including depreciation, cost of capital, maintenance, licensing, enhancements, and operating costs (business and technology) for all components.
	Services and API Catalogue	Catalogue of the agency specific services and APIs.
	ICT Service Inventory and Service Management Model	ICT Service Inventory and Service Management Model.

Infrastructure

Description

GEA-NZ Infrastructure Reference Model describes the technology infrastructures that support the application and business processes of the organisation. It may include insourced, outsourced or cloud capabilities. The GEA-NZ Infrastructure reference model includes sub-dimensions for facilities, platforms, networks, and end user devices.

At an All-of-Government level, the GEA-NZ Infrastructure reference model guides the development of maintenance of common capabilities and the sharing and reuse of infrastructure to reduce costs, increase interoperability across agencies, support efficient acquisition and deployment, and enable greater access to information across organisations.

At an agency level, the GEA-NZ Infrastructure reference model describes the infrastructure assets of the agency, and helps ICT asset management. It also helps agencies plan their migrations away from internally owned and managed infrastructure to cloud and common capability of offerings as required in the ICT Strategy and Action Plan.

The Infrastructure Reference Taxonomy provides the basis for categorising infrastructure assets at a department or agency level as well as an AoG level.

Context and Relationships

Infrastructure	helps policy compliance through the adoption of common capabilities	Strategy, Investment, and Policy
	provides the infrastructure that enables Governance and Performance measurement and control, and offers opportunities to improve business efficiency through sharing and reuse	Governance and Performance
	provides the infrastructure that support business services, processes, capabilities, information sharing, and reuse	Business
	provides the infrastructure to support storage and exchange of data	Data and Information
	provides the internal or external infrastructure for hosting applications and ICT services	Application and ICT Services
	provides the infrastructure controls needed to support security and privacy requirements	Security and Privacy
	sets the infrastructure requirements that drive development and scope of corresponding standards	Standards

How to use the GEA-NZ Infrastructure Reference Model

This section presents examples of how the GEA-NZ Infrastructure reference model is used to solve agency issues. The Infrastructure artefacts can be used for decision making regarding infrastructure asset inventory which are categorised in the Infrastructure Reference Taxonomy.

Complete an Infrastructure asset management inventory

Mapping an agency's infrastructure assets to the Infrastructure Reference Taxonomy and Application and ICT Services Reference Taxonomy provides a robust technical definition, categorised by a common taxonomy, which will harmonise the islands of IT asset information collected by proprietary IT management sensor/discovery tools. Infrastructure Asset Management provides the foundation for the infrastructure architecture consisting of computing devices, peripherals, systems, applications and technology capital investments, interwoven with the other architectural dimensions, to render a "line of sight" that equates to measurable value chains (e.g. Return on Investment (ROI) and Total Cost of Ownership (TCO)) incorporating all associated costs.

Evaluate whether to consolidate infrastructure to the cloud, using the IT infrastructure asset inventory

Using the Infrastructure Asset Inventory and Infrastructure Reference Taxonomy categorisation, the agency will be able to identify component services for internal private cloud implementation, due to security and information sensitivity requirements, and public cloud solutions that sustained their existing hosting and operational and maintenance needs while enabling a migration towards their emerging technology and standards-based service model.

Artefacts

Infrastructure	Artefact	Description
	All of Government	
	AoG Infrastructure Asset Catalogue	Catalogue maintained by DIA's Commercial Strategy and Delivery for generally available government common infrastructure capabilities.
	Infrastructure Reference Taxonomy	The infrastructure reference taxonomy provides a categorisation schema for IT infrastructure assets
	Agency	
	Infrastructure Asset Catalogue	Catalogue application and ICT services available to an agency maintained by an agency's ICT department.
	Infrastructure Asset Management	The inventory and management of which applications exist and their main characteristics such as flexibility, maintainability, owner, operational cost, investment plan etc.
	Total Cost of Ownership Models	Calculation of the total cost of ownership of infrastructure assets and services over a given period (usually 5-7 years) including depreciation, cost of capital, maintenance, licensing, enhancements, and operating costs (business and technology) for all components.
	Agency Configuration Management Database	The Agency Configuration Management Database (CMDB) contains all relevant information about the components of the information systems used in an agency's IT services and the relationships between those components. Shown here as part of the application and ICT services and infrastructure areas as it typically maps the application and ICT services to the actual platforms and hardware they are deployed on.

Security and Privacy

Description

The GEA-NZ Security and Privacy Reference Model is summarised in the diagram below, does not prescribe a “new” approach to these concerns but rather gives an enterprise architecture context to system or service Protective Security² and Privacy requirements and other artefacts that guide security and privacy considerations through the security and privacy life-cycle. These apply to agency, sector and All-of-Government levels for all dimensions of the architecture, and can be considered as it’s own eco-system supporting government business.



GEA-NZ v3.1 Security and Privacy Reference Model

The Government Chief Privacy Officer has issued [core expectations](#) that represent good practice for privacy management and governance in the State services. A Privacy Maturity Assessment Framework has also been developed to help agencies assess their existing capability and implement appropriate improvements. Technology is an important part of the solution to improving capability in privacy management across government.

Governance and accountability arrangements for security and privacy will vary within agencies, but Architecture has a role to play in ensuring that security and privacy management is applied systematically and comprehensively at all scales, from All-of-Government planning through sector information management down to individual component designs within agency applications.

At all levels and life-cycle phases, there are standards, rules, guidelines and other artefacts which the agency’s Enterprise Architecture should reflect, including security and privacy standards, threat and vulnerability taxonomies, security risk management processes, risk registers, control catalogues, and improvement plans. These are outlined below.

² Protective Security policy and guidance is currently being updated and consolidated (October 2014). The products concerned include the SIGS, PSM, NZISM and alignment of GCPO Privacy framework.

Context and Relationships

Security and Privacy	identifies security and privacy risk considerations for strategy, investment, and policy development	Strategy, Investment, and Policy
	provides security and privacy inputs and constraints for governance and performance measurement and control	Governance and Performance
	provides security and privacy information, tools and standards that secure customer interests, channels, business services, and processes	Business
	provides security and privacy input and constraints for collection, storage and exchange of information	Data and Information
	provides security and privacy information, tools and standards that secure applications and ICT services	Application and ICT Services
	provides security and privacy information, tools and standards that secure infrastructure	Infrastructure
	defines security and privacy standards and implementation guidelines	Standards

How to use the GEA-NZ Security and Privacy Reference Model

Using security and privacy regulations, directives, policies and standards to ensure fit-for-purpose official information assurance at the International, National, Sector, Agency or Department Level, through a risk-based approach

The key tenet of Security and Privacy dimension is to describe the life-cycle of ICT security, privacy and information assurance as it applies to government agencies and non-public entities. It frames the security and privacy mandated standards, practices and reference sources used in conducting information security and privacy risk assessments, and implementation of mitigating actions (controls) for agencies, in the context of a life-cycle of security from business requirements through to operational reviews (or audits).

The ICT security space embraces the physical (facilities) and personnel dimensions as well as technology. 'Standards' include security and privacy laws, legislation and regulations enacted by the government to control information and infrastructure, as well as approved supporting international and industry de-facto standards. The GEA-NZ Security and Privacy Reference Model identifies the intersection between standards and security/privacy policies within and across agencies.

The risk assessment component relies on the threats and vulnerabilities taxonomies that are considered best practice within government environments. The emphasis on an information centric risk-based approach ensures that security and privacy policies (controls set) are balanced with appropriate requirements not to preclude the agencies achieving their business objectives.

Particular consideration is given to providing tools and enhanced guidance on the adoption of cloud-based services and products, including the All-of-Government Common Capabilities³.

Using Policy to select Controls at the Agency or Sector Level

At agency or sector level, the GEA-NZ Security and Privacy reference model identifies the national policies and endorsed supporting sources in place to classify controls. These controls can then be inherited or used at lower system or application levels. Similarly, these controls can be used to assess whether Cloud Provider offerings are fit for the intended purpose, including AoG Cloud (Common Capability) offerings.

Enforcing Design with Controls at the System or Application Level

At the system or application level, the GEA-NZ Security and Privacy reference model uses the controls in place at the agency or sector level to facilitate the design and/or requirements of the specific system. It is critical for architects to be involved in the earliest stages of planning a system or application in order to minimise the impact sometimes involved if security and privacy is added or addressed at a later stage.

It is also crucial to understand the business goals and processes that are driving decisions for a particular system or application, in addition to knowing what policies and controls will be inherited. Therefore, it is expected that the 'Certification and Accreditation' (C&A) process will begin at the design stage in order to inform architectural decisions. Security testing (e.g. Vulnerability assessments, penetration tests, physical checks) and Audit activities are implicitly included as part of the C&A component of the reference model through the life-cycle.

Cloud Service providers are included in this model as being subject to the same controls and rulesets as would need to be designed into an in-house built system or hosted application. This includes AoG Cloud Services.

It is also critical for the architect to use the GEA-NZ Security and Privacy reference model to ensure that proper security and privacy controls are placed at each level. Security flows down; but if no agency or segment provides or defines the control, the system architect must put them in place, creating extra effort and inconsistency between systems. If a law specifies certain action, the system level must comply whether or not an agency capability or policy has been developed to support that law.

³ NZ Government ICT Common Capabilities include IaaS, DaaS, OPaaS, SaaS, TaaS, CWP, SEEMail and others.

Artefacts

Security and Privacy	Artefact	Description
	All of Government	
	NZ Security and Privacy Policies, Regulations and Laws	Privacy Act; NZISM 2014; PSR 2014 (incorporating SIGS, PSM and NZISM); NZ Cyber Security Strategy (Jun 2011);
	National and International Security and Privacy Standards	ISO/IEC-270xx:2011 series; AS/NZS ISO 31000:2009 Risk Management; NIST-SP-800-53;
	Security and Privacy Guidelines and Best Practice	CMU OCTAVE Allegro Risk Assessment methodology; SABSA Security Maturity Framework; COBIT; OWASP
	AoG Guidelines and Assurance	Risk Assessment Process – Information Security; Cloud Computing – Information Security and Privacy Considerations [104 Questions];
	Common Threats and Vulnerabilities Taxonomies ⁴	DSD (ASD) Top 4 Mitigation Strategies ⁵ ; ISO/IEC-27002; SANS; GEA-NZ v3.1 Taxonomies; Cyber Critical Security Controls (Top 20) ⁶ ;
	Security and Privacy Maturity Assessment Tools and Guidelines	GCPO Privacy Maturity Assessment Framework; ICT Security Maturity Assessment;
	Agency	
	Agency/Sector Specific Security and Privacy Policies and Guidelines	[Information] Security Strategy; Information Security Policy; Security Risk Management Policy/Plan; System/Service Security Policy/Plan. Additional security and privacy regulations and guidelines for an agency, such as: Business Continuity and Disaster Recovery Plans; ICT Incident Management Plans; Standard Operating Procedures; Audit reports; PKI Management Plans (CP, CPS, etc.); Assurance/Governance/Performance metrics and reporting; Security Architecture(s);
	Agency Specific Threats and Vulnerabilities Taxonomies	Threats and vulnerability taxonomies are inputs to risk assessments. Agencies should identify threats and vulnerabilities specific to their business from the AoG mandated and advisory sources (above, and as regularly revised by GCSB/NCSC); Configuration Management Database (CMDB); Asset Register; Approved Software Catalogue.
	Agency Security and Privacy Risk Artefacts	Risk Register: Agencies are required to maintain a hierarchy of risk registers from agency to specific projects, teams and system levels. Security related items to be included at each level, in a suitable format. Risk Action Plan: Agencies are required to produce risk action (mitigation) plans for each system, project, service and other unique environment or capabilities deemed critical to agency operations.
	Agency Security and Privacy Maturity Assessment Results and Improvement Plan	Results for all security and/or privacy maturity assessments (including the Cloud Considerations Questionnaire) conducted by the agency, and an associated plan to improve the maturity level of security and privacy within the agency.
	Project Related Security and Privacy Assessments (Certification and Accreditation)	The Certificate and report (results) from the C&A process for projects, systems, services deemed critical to the agency's operations, to ensure compliance with government and agency's security regulations. Results for an agency specific project performing the security and privacy maturity assessment to make sure the project is in line with the government and agency's regulations around security and privacy.

⁴ Threats and Vulnerability taxonomies are inputs to Information Security Risk Assessments.

⁵ <http://www.asd.gov.au/infosec/mitigationstrategies.htm>

⁶ <http://www.cpni.gov.uk/advice/cyber/Critical-controls/> or; <http://www.sans.org/critical-security-controls/> or; <http://www.counciloncybersecurity.org/practice-areas/technology>

Considerations

Government level stakeholders should consider the following factors when using the Security and Privacy reference model in conducting an information risk assessment:

- What is the agency/department's primary business?
- What value⁷ does the agency/department place on its information and data?
- What AoG Common Capabilities would it be logical for agencies/departments to adopt, and more importantly cannot adopt, based on security and privacy factors?
- With what other departments/agencies would it be logical to share services?
- What effect will a minimum policy statement have on subordinate agency business requirements?

Agency level stakeholders should consider the following factors during the Controls phase, resulting from the Risk Assessment phase:

- What types of information (e.g. health, personal, national classification) are processed and is there regulatory guidance specific to those information types?
- What controls are required based on the types of information, and how might they limit business processes?
- Does this create a risk to the business goal/objective? If so, is it greater than the risk of not implementing the control?⁸

System/application level stakeholders (such as designers and vendors) should additionally consider the following factors:

- Are there pre-defined controls required for this type of information?
- Are there risk concerns not covered by predefined controls?

⁷ 'Value' in this context refers to factors such as (but not necessarily limited to) the sensitivity, criticality, volume (aggregation) and timeliness of the associated data and information concerned to government, as well as citizens and businesses. This is measured in the context of the information security principles of Confidentiality (sensitivity, sovereignty), Integrity, Availability and Probability of exposure.

⁸ Potentially requiring residual risk management controls.

Standards

Description

The GEA-NZ Standards Reference Model sets out and categorises the information and technology standards base for the NZ government. The existing standards base incorporating the eGovernment Interoperability Framework (eGIF) standards is structured according to GEA-NZ v2.0. Government enterprise architecture will restructure the standards base mapped to the GEA-NZ v3.1 dimensions i.e. Business, Data and Information, Application and ICT Service, Infrastructure, and Security and Privacy.

Context and Relationships

Standards	identifies standards for compliance and improved collaboration	Strategy, Investment, and Policy
	provides standards inputs for setting governance and performance measurement and control	Governance and Performance
	provides standards that guide business services, processes, capabilities, information sharing, and reuse	Business
	provides standards that guide data and information	Data and Information
	provides standards that guide application and ICT services	Application and ICT Services
	provides standards that guide infrastructure	Infrastructure
	defines standards and implementation guidelines	Security and Privacy

Artefacts

Standards	Artefact	Description
	All of Government	
	GEA-NZ Standards	These are the technical interoperability standards for which the Government Enterprise Architecture team are responsible to manage, co-ordinate and publish.
	National and International Standards and Guidelines	GEA-NZ aligned reference to National and International Standards and Guidelines
	Agency	
	Agency Standards	These are the technical standards for which the agency is responsible to manage, co-ordinate and publish.

Cross-Cutting Groups and Artefacts

There are currently three cross cutting component groups.

Capabilities

The capability view on the architecture maps the elements of the reference taxonomies to capabilities, which agencies may develop internally or source from the market.

The capability view is one of the most important artefacts of the Enterprise Architecture, as it is the immediate focus for:

- Identifying common capabilities across agencies and sectors
- Gap analysis in future state transitions

Artefact
All of Government
Capability taxonomy mapped to the architecture reference taxonomies, including <ul style="list-style-type: none">- Government Business Capabilities- Government People Capabilities – ICT- Government Data and Information Capabilities- Government Application and ICT Service Capabilities- Government Infrastructure Capabilities
AoG Common Capability Catalogue as input to the Government Common Capability Roadmap (see Strategy, Investment, and Policy).
Agency
Agency Capability Heat-Maps
Agency Business Capabilities
Agency People Capabilities
Agency Data and Information Capabilities
Agency Application and ICT Service Capabilities
Agency Infrastructure Capabilities

Reference Architectures and Patterns

The reference architectures and patterns provide information, guidelines and directions on specific domains of the enterprise architecture that are applicable across agencies. Reference architecture and patterns may cover:

- **Strategic Purpose:** Identifies goals and objectives of the Reference Architecture and describes the specific purpose of and the problem(s) to be addressed by the Reference Architecture.
- **Principles:** Sufficient high level foundational statements of rules, culture and values that drive technical guidelines, standards and patterns.
- **Architecture and Design Governance:** The practice and orientation by which the architectures and designs are managed and controlled at an enterprise-wide level.
- **Technical guidelines and standards:** based on specified principles that need to be followed and implemented as part of the solution.
- **Patterns:** Generalised architecture representations (viewpoints, graphical / textual models, diagrams, etc.) that show relationships between elements and artefacts specified by the technical guidelines and standards.
- **Vocabulary:** Acronyms, terms and definitions that are used in the Reference Architecture and relevant to architecture and solutions that are guided and constrained by the Reference Architecture.

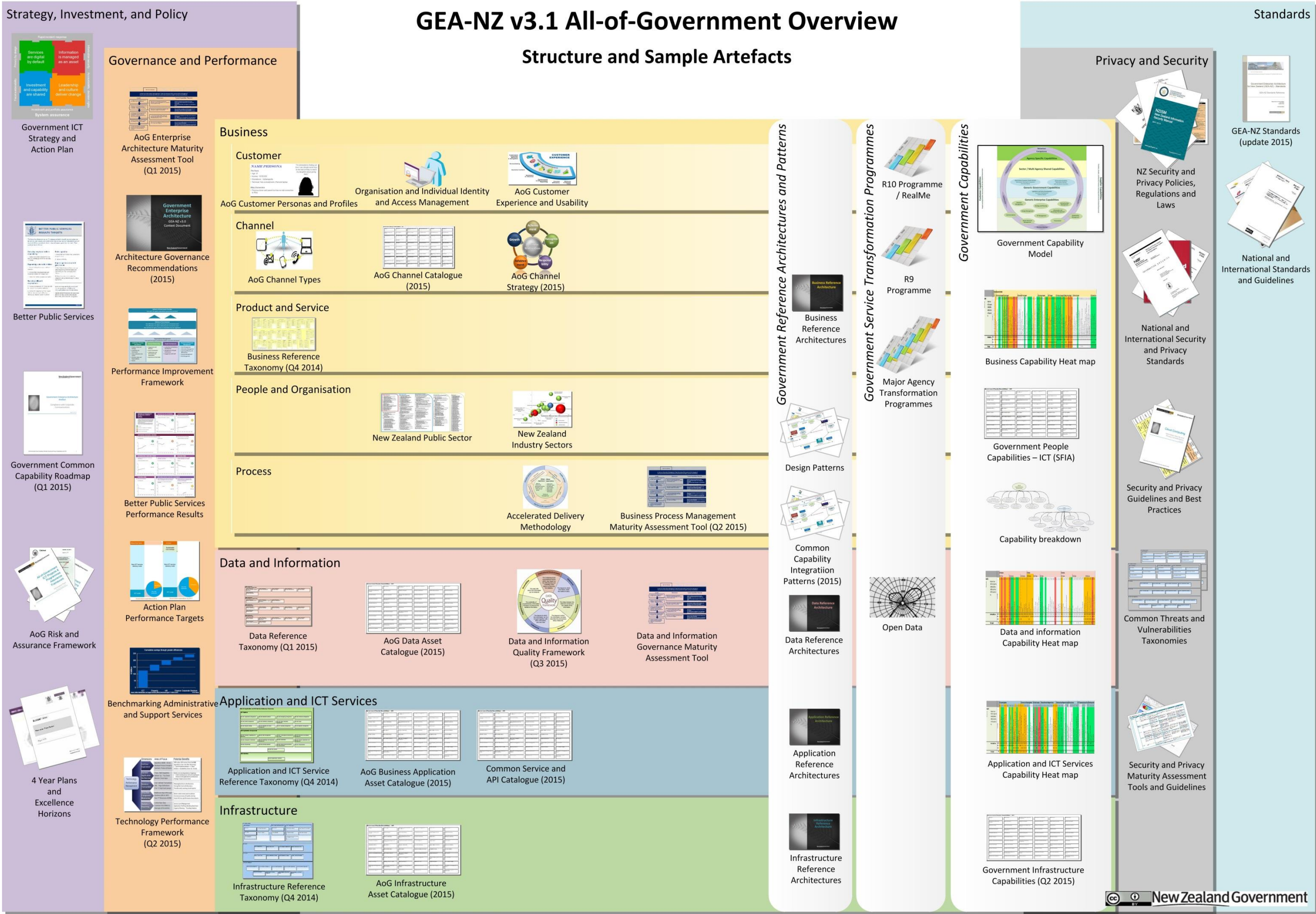
Artefact
All of Government <i>These are the proposed initial AoG Reference Architectures and their patterns</i>
Business Reference Architecture <ul style="list-style-type: none"> - Business Process Design Patterns
Data Reference Architecture <ul style="list-style-type: none"> - NZCIQ Implementation Guidelines
Application Reference Architecture <ul style="list-style-type: none"> - SOA Design Patterns - API and Integration Design Patterns - Messaging Design Patterns - Secure Web Services Standards - Cloud Identity and Access Management design patterns
Infrastructure Reference Architecture <ul style="list-style-type: none"> - COE reference architecture
Design Patterns
Common Capabilities Integration Patterns
Agency
Agency specific Business Reference Architecture
Agency specific Data Reference Architecture
Agency specific Application Reference Architecture
Agency specific Infrastructure Reference Architecture

Programmes and Projects

Programmes and projects are the mechanism by which change is delivered and therefor represents the evolution of architecture from current state, through transition to future state. They are the main link between strategy and the other elements of the architecture.

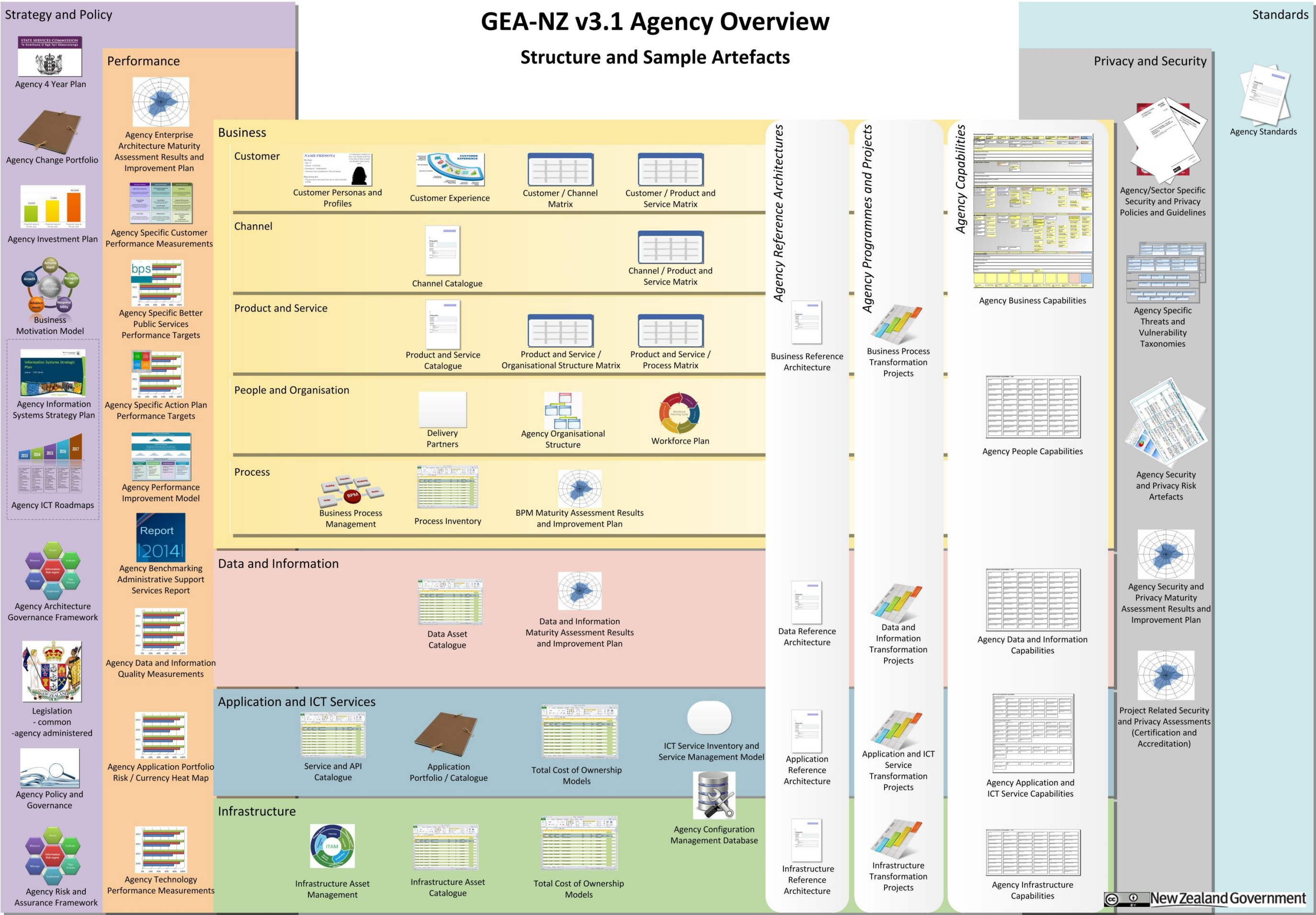
Artefact
All of Government <i>Main vehicles for system change</i>
R9 Programme
R10 Programme/RealMe
Major Agency Transformation Programmes
Open Data
Agency
Agency's Business Process Transformation Projects
Agency's Data and Information Transformation Projects
Agency's Application and ICT Services Transformation Projects
Agency's Infrastructure Transformation Projects

Appendix A – GEA-NZ v3.1 AoG Structure and Artefacts Overview – To be updated with v3.2



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Appendix B – GEA-NZ v3.1 Agency Structure and Artefacts Overview



Appendix C – GEA-NZ History

Pre GEA-NZ

Pre GEA-NZ the Government Enterprise Architecture was known as NZ FEAF; short for the Federated Enterprise Architecture Framework, which had last been updated in 2008. This was partially based on the US FEAF v1.0; with significant variation in the business dimension where it has SoNZ (Subjects of New Zealand), and FoNZ (Functions of New Zealand). The Information dimension had a meta-model but no taxonomy. There was no link to standards, strategy, investment and policy, security and privacy, performance and governance. There was a separate framework for standards known as e-GIF (short for e-Government Interoperability Framework) and v3.3 of this was also last updated in 2008.

Both were developed and maintained by the State Services Commission (SSC). Both were mastered in Word. Both were published in PDF.

GEA-NZ v1.0

GEA-NZ v1.0 replaced the NZ FEAF but e-GIF with the associated standards remained. It addressed the aims of the Directions and Priorities for Government ICT programme; its regions and zones were oriented towards classifying and describing the infrastructure Common Capabilities that were developed within the programme from 2009-2013.

GEA-NZ v1.0 was created by Government Technology Services within DIA. It was mastered in Word, Excel, Visio, and PowerPoint. It was published in PDF.

GEA-NZ v2.0

GEA-NZ v2.0 included the introduction of a Business taxonomy based on the Australian Enterprise Architecture v3.0. This was used to produce the ICT Common Capability Roadmap iteration 1. Many of these are now AoG Products and Services on ICT.govt.nz.

GEA-NZ v2.1 was mastered using the OpenText Provision Enterprise Architecture modelling tool with output to Word, Excel, and PowerPoint. It was published in PDF with Excel tools available.

GEA-NZ v2.1

The GEA-NZ v2.1 update included the addition of the Common Operating Environment (COE) reference architecture and was used to replace the e-GIF standards and produced the GEA-NZ Standards Reference v2.0, and the associated GEA-NZ Standards Reference Appendix.

GEA-NZ v2.1 was mastered using the OpenText Provision Enterprise Architecture modelling tool with output to Word, Excel, and PowerPoint. It was published in PDF with Excel tools available.

GEA-NZ v3.0

The GEA-NZ v3.0 marked a change from primarily a technology focus to an enterprise focus developing the business dimension. The business taxonomy was significantly revised including integration of the NZ SoNZ and FoNZ, and tailoring with agencies. The Application and ICT Services and also Infrastructure taxonomies were completely revised using the US FEAF v2.0 taxonomies as a start point.

GEA-NZ v3.0 was initially developed in the Open Text Enterprise Architecture modelling tool but was then ported to the Sparx Enterprise Architect (Sparx EA) tool which has a wide user base across EA practices in Government. It is mastered using Sparx EA models with output to Word, Excel, and PowerPoint. It is published in PDF, CSV, Excel files, and Sparx modelling XMI files.

GEA-NZ v3.0 was aligned to the original Government ICT Strategy and Action Plan 2017⁹ and Better Public Services Results and shifts GEA-NZ "up the stack" to emphasise business architecture and data and information tiers, and to draw out concerns of interoperability, security/privacy and information reuse. The focus is now on how ICT can enable system transformation across government, not just efficiency and effectiveness.

The *Government ICT Strategy and Action Plan to 2017* sets out the strategic goals for transformation of Government ICT. One of the actions in the plan is to:

"Extend the Government Enterprise Architecture Framework to support transactional system interoperability, enterprise security, and business-enabling elements such as data services and processes."

GEA-NZ v3.1

The GEA-NZ v3.1 Framework is an evolutionary update that included a new Data and Information Taxonomy as well as minor updates to the taxonomies in the other dimensions. In addition some new GEA-NZ tools such as the Information Governance Maturity Assessment Tool, the Information Discovery Process, and the Information Asset Catalogue template and guidelines were developed.

The need for GEA-NZ to evolve is detailed in the Action Plan Update published in 2014.

Actions 9.1 and 9.2 of states that CIOs are required to:

"9.1: Continually evolve GEA-NZ, leveraging collaborative networks, to share maturity frameworks, architectures, patterns and standards"

"9.2: Agencies to adopt GEA-NZ as the framework for Enterprise Architecture and capability planning"

⁹ The *Government ICT Strategy and Action Plan 2017* was published in 2013.

Appendix D – GEA-NZ v3.1 Colour Palette

Strategy and Policy		GEA-NZ v3.1 Colour Palette		Standards	
		Performance		Privacy and Security	
R = 204 G = 190 B = 216	R = 250 G = 205 B = 156	Business	R = 252	R = 203 G = 203 B = 203	R = 206 G = 234 B = 236
		Customer	G = 234 B = 163		
		Channel			
		Product and Service			
		People and Organisation			
		Process			
		Data and Information	R = 243 G = 209 B = 201		
		Application and ICT Services	R = 167 G = 197 B = 209		
		Infrastructure	R = 188 G = 217 B = 164		

