Grenada Enterprise Architecture Framework

DTA, 2024

Government of Grenada

S. No.	Data Elements	Values
1	Title	Grenada Enterprise Architecture Framework
2	Title Alternative	GEA –FW
3	Document Identifier	GEA.FW.001
4	Document Version, Month, Year of Release	Version 0.1, December 2024
5	Present Status	Draft
6	Publisher	Department of ICT, Government of Grenada
7	Date of Publishing	To be updated
8	Type of Standard Document	Framework
9	Enforcement Category	Mandatory
10	Creator	DTA, Government of Grenada
11	Contributor	Names of participating MDAs and industry body
12	Brief Description	This document provides an overview of GEA Framework and the core concepts covered under GEA
13	Target Audience	General
14	Owner of Approved Standard	Office of Prime Minister
15	Subject	Enterprise Architecture
16	Subject Category	Institutional Mechanism
17	Coverage: Spatial	Grenada
18	Format	PDF (PDF/A at the time of release of the final standard)
19	Language	English
20	Copyrights	Government of Grenada

Grenada EA Framework overview

The initial version of the Grenada EA framework has been developed based on specific inputs from the digital strategy, preliminary discussions with senior leadership, and industry representatives. It is expected to evolve over time through multiple architectural iterations across strategic, segment, and capability levels. A high-level introduction for each group of components represented in this framework is presented below.

1. Inputs to Grenada EA

The framework is grounded in **Grenada's National Vision**, aiming for sustainable economic growth and social resilience. The **Digital Vision and Strategy** supports this by focusing on advancing digital capabilities across government and industries. The **GEA Policy** establishes principles and guidelines to align government operations with digital transformation goals, ensuring coherence, accountability, and progress.

2. Enabling Digital Grenada

The **Focus Areas** prioritize **digital innovation**, **technology access**, **eService delivery**, **seamless user experiences**, and fostering **economic growth**. These focus areas are supported by the Digital **Priority Themes**:

- **Build People**: Develop digital skills and capacity.
- **Simplify Life**: Enhance citizen experiences through streamlined government services.
- **Boost Resiliency and Sustainability**: Create a foundation for economic and environmental sustainability.

3. Roadmap: Baseline, Transition, and Target Architectures

The r**oadmap** outlines the steps to progress from the **baseline architecture** (current state) to the **target architecture** (future vision). This includes several **transition architectures**, which define intermediate states to guide the government's gradual transformation. These roadmaps ensure strategic alignment and manageable implementation.

4. Architecture Domains

The architecture domains represent the core pillars of the GEA framework:

- **Performance**: Ensures that all initiatives meet measurable goals for effectiveness and efficiency.
- **Interfaces**: Focus on seamless connectivity between systems and stakeholders.
- **Services**: Deliver simple and accessible services to citizens and businesses.
- **Interoperability**: Promote data exchange and collaboration across MDAs.
- **Data**: Centralized data management to ensure quality and security.
- **Platforms**: Establish shared technology platforms for cost-effective service delivery.
- **Infrastructure**: Underpins the framework with reliable and scalable technology.

5. GEA Core Components:

The **Core Components** provide the operational foundation of the framework, including:

- **GEA Governance**: Ensures compliance and oversight.
- **Principles, Standards, and Guidelines**: Define how architecture is developed and maintained.
- **Architecture Development Methods**: Standardized approaches for creating and refining the architecture.
- **Reference Models**: Templates and patterns for accelerated implementation.
- **Maturity Assessment Framework**: Tracks progress and identifies improvement areas.
- **Compliance Framework**: Enforces adherence to policies.
- **Repository and Registries**: Store and manage architecture artifacts and essential government data.
- **Interoperability and Shared Platforms**: Foster collaboration and reduce duplication of efforts.
- **Unified Citizen Touchpoints**: Ensure citizens have consistent, user-friendly access to services.

6. Building Digital Capabilities

Government Focus: Emphasizes capability development, cost optimization, procurement support, collaboration, and better governance to strengthen public sector service delivery.

Industry Focus: Aims to foster an innovative digital ecosystem, create strategic global linkages, and drive sustainable development to support Grenada's economic and technological growth.

National vision

Digital vision and strategy

GEA policy

Grenada Government Enterprise Architecture (GEA) Framework

Enable Digital Grenada

Focus areas: digital innovation | technology access | eService delivery | seamless user experience | economic growth

Priority themes: build people | simplify life | boost resiliency and sustainability

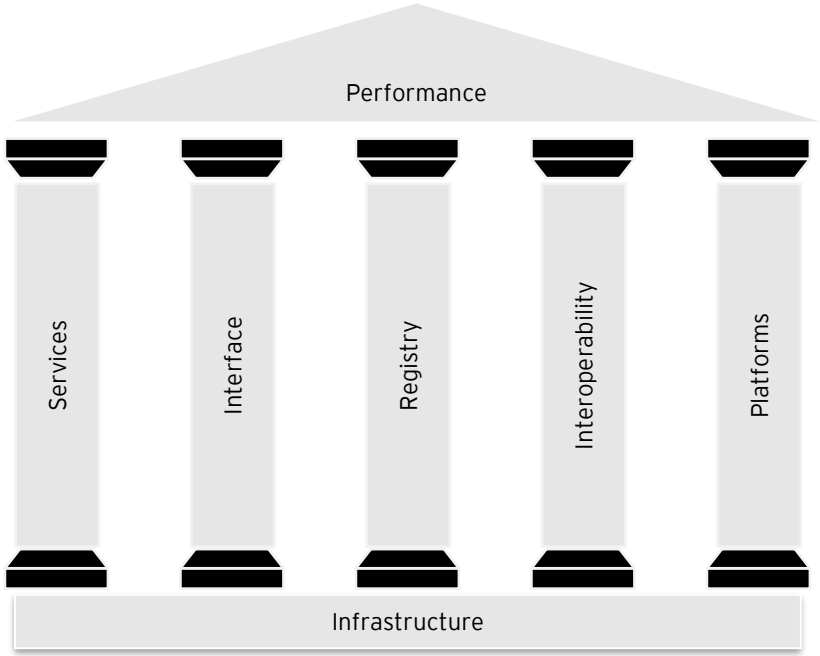
Roadmaps

Baseline Architecture

Transition Architecture (s)

Target Architecture

Architecture domains



GEA core components

- GEA governance
- Principles, standards and guidelines
- Architecture development methods
- Architecture Reference models
- Maturity assessment framework
- Compliance framework
- GEA repository
- Service simplification framework
- Common reusable and shared platforms
- Interoperability framework
- Unified citizen touchpoints
- Government registries
- Government Infrastructure

Build Digital Capabilities

Government focus: capability development | procurement support | cost optimization | collaboration | better governance

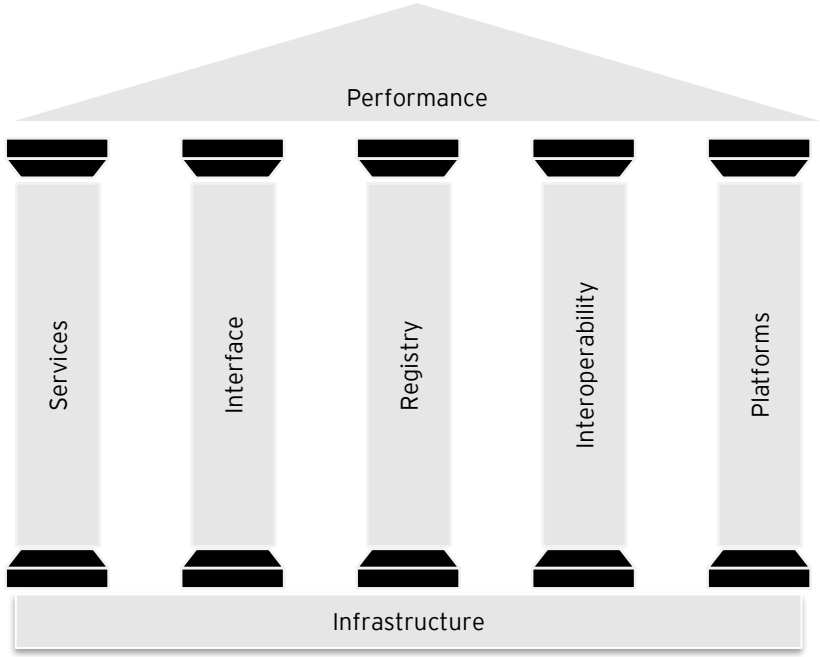
Industry focus: innovative digital ecosystem | strategic global linkages | sustainable development

Architecture domains proposed for GoG

It is proposed to tailor TOGAF® architecture domains to suit GoG requirements and culture. Grenada EA architecture domain is expected to focus on multi-modal service delivery which focus on the ease and simplicity of user access, develop common / shared / reusable architecture and solution building blocks that serve the common interests. The BDAT model is proposed to be expanded to cover the following architecture domains: (1) performance (2) services (3) interfaces (4) interoperability (5) Registry (6) Platforms (7) Infrastructure.

Architecture domains description:

1. **Performance**: This will be used to measure the success and maturity of the specific programs undertaken under digital transformation by GoG.
2. **Interfaces**: The citizen touchpoints will be a focus for this reference model opening different modalities for delivering eServices to citizens and the applicability.
3. **Services**: This will be the transformational component wherein we deviate from standard business architectures to government service delivery focus. This will focus on government service simplification and recommend standardization of services across government.
4. **Interoperability**: This layer will promote the seamless exchange of information across MDAs through common government wide platforms and open data exchange standards.
5. **Data**: This layer establishes the data management and governance along with the focus on treating government data as a strategic asset for future applications.
6. **Platform**: These are the common foundational technology platforms that are recommended for delivery of government services and transactions to users.
7. **Infrastructure**: These cater to the underlying technology (data centre, cloud, networks and security infrastructure layers) required to deliver digital services by Government.



Summary of architecture domain annexure document (1/2)

The architecture domain report outlines a comprehensive framework for the development and implementation of enterprise architecture domains tailored to the Government of Grenada's needs. It provides structured guidance across various domains to achieve efficiency, transparency, and digital transformation.

Specific areas of focus include performance, service and interoperability which have been tailored from the existing Business-Data-Applications-Technology domains proposed in TOGAF. This allows us to focus on the specific needs and context for GoG. Each architecture domain focus on the architecture principles, standards, guidelines and recommendations.

Performance Architecture

This domain defines the metrics, standards, and frameworks for evaluating the success and efficiency of government programs. It aligns national goals with measurable outcomes through well-defined KPIs, maturity assessments, and monitoring tools. This is intended for MDAs like MoMIT who can leverage this framework to review progress of implementation across digital initiatives.

Key Guidelines and Criteria:

- Development of performance measurement frameworks and templates to define KPI
- 19 KPIs to measure progress of digital transformation initiatives

This domain ensures that citizens interact seamlessly with government services through multiple digital touchpoints like One-Stop Shop, unified government mobile app for eServices, AI chatbots and assistive government physical service delivery centers.

Key Guidelines and Criteria:

- One-Stop Shop frameworks – Drupal, Liferay DXP
- Unified mobile app development frameworks – Flutter and React Native
- AI assistants – Proprietary and Open-source models

Services Architecture

Focusing on the standardization and digitization of government services, this domain simplifies workflows, automates processes, and defines a comprehensive service catalog for efficient delivery.

Key Guidelines and Criteria:

- Service definition framework and template
- Service simplification guidelines
- Security considerations for service design

The chapter focus on managing government registries as strategic assets with governance and quality focus.

Key Guidelines and Criteria:

- Reference government registries and corresponding international standards
- Registry lifecycle framework
- Registry identification and quality assessment guidelines

Interoperability Architecture

The domain promotes seamless data and information sharing between Ministries, Departments, and Agencies (MDAs). It defines standards for APIs, data exchange protocols, and governance models.

Key Guidelines and Criteria:

- API standards and security considerations
- Adoption of Interoperability platform – API gateway, Government Service Bus (GSB) and Event Streaming Platform
- API lifecycle framework and potential solutions – SwaggerHub, Postman

Summary of architecture domain annexure document (2/2)

Platform architecture

This domain establishes foundational platforms to support government operations, including shared services, identity management, and transaction systems. It emphasizes scalability, efficiency, and security.

Key Guidelines and Criteria:

- Government solutions and platform classification
- Implementation of shared services
- Recommendations for common technology platforms
- Criteria for selection of Government solutions
- Criteria for selection of government service delivery platform
- General security guidelines across platforms

Infrastructure architecture

Infrastructure is the backbone of digital government services. This domain covers the physical and virtual infrastructure, such as data centers, cloud solutions, and networks.

Key Guidelines and Criteria:

- Guidelines for selection of hosting platform – cloud / on-premise and SaaS/PaaS, Containers and VMs
- Criteria for selection of appropriate hosting platform – cloud / government data center
- Security considerations across infrastructure layers – user access devices, peripherals, network, cloud and DC

Recommendations

The report covers specific recommendations across each section of the architecture domain. Some of the key recommendations are:

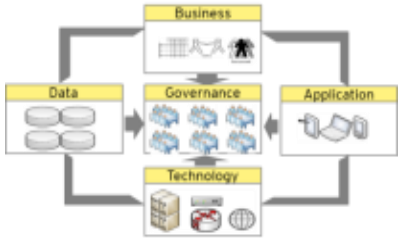
1) Implement **performance management dashboard** platform that has the national level KPIs configured with options for data uploads and integrations across services and projects.
2) Identify and document the **national level services** delivered by GoG across all MDAs.
3) Discuss and finalize the **service simplification guidelines** and adapt it to be used for GoG service simplification.
4) Nominate **service simplification change agent** for each MDA who will champion the change process.
5) Engage with local technology industry players to collaborate and **finalize the chosen platforms for One-Stop Shop and mobile app.**
6) Establish **AI framework governance team** for taking decisions on AI models to be considered for public sector.
7) Conduct **government-wide registry** identification and assessment exercise.
8) Establish an **Interoperability services team** within DTA to support the implementation of standards and frameworks.
9) Create a **national interoperability policy** that defines roles, responsibilities, and collaboration protocols.
10) Build a **National Data Standards Catalogue** for commonly used data structures and formats (e.g., citizen IDs, location codes) through Open Data Framework.
11) Implement a **Government Service Bus (GSB) and API Gateway** (for Grenada digital services) to act as an interoperability middleware layer.
12) Establish a **technology platforms committee** within DTA including local industry participation to evaluate and select technology platforms that will be considered as standard platforms to develop government services.
13) Invest in **local talent** to build capability on the select technology platforms.
14) Engage with **academia** to update individual courses for training students.
15) Establish governance process to conduct **security audits** periodically to develop cyber resiliency.

Architecture Development Method (ADM) for driving standardization

Grenada ADM provides a structured approach for digital transformation initiatives within GoG. It encompasses key activities such as establishing a robust architecture framework, designing and refining architecture content, transitioning to target architectures, and ensuring effective governance throughout implementation. These activities are conducted within an iterative cycle, enabling continuous evolution and alignment of architecture with organizational goals. This approach empowers governments to drive digital transformation in a controlled and strategic manner, ensuring alignment with business priorities and maximizing opportunities for innovation and efficiency.

Roadmaps

Baseline Architecture



Transition Architecture (s)

Target Architecture

Approaches for architecture development

Various approaches are possible while applying the ADM to a project. However, it is dependent on the maturity and complexity of the enterprise to decide on the appropriate approach from below:

Baseline first

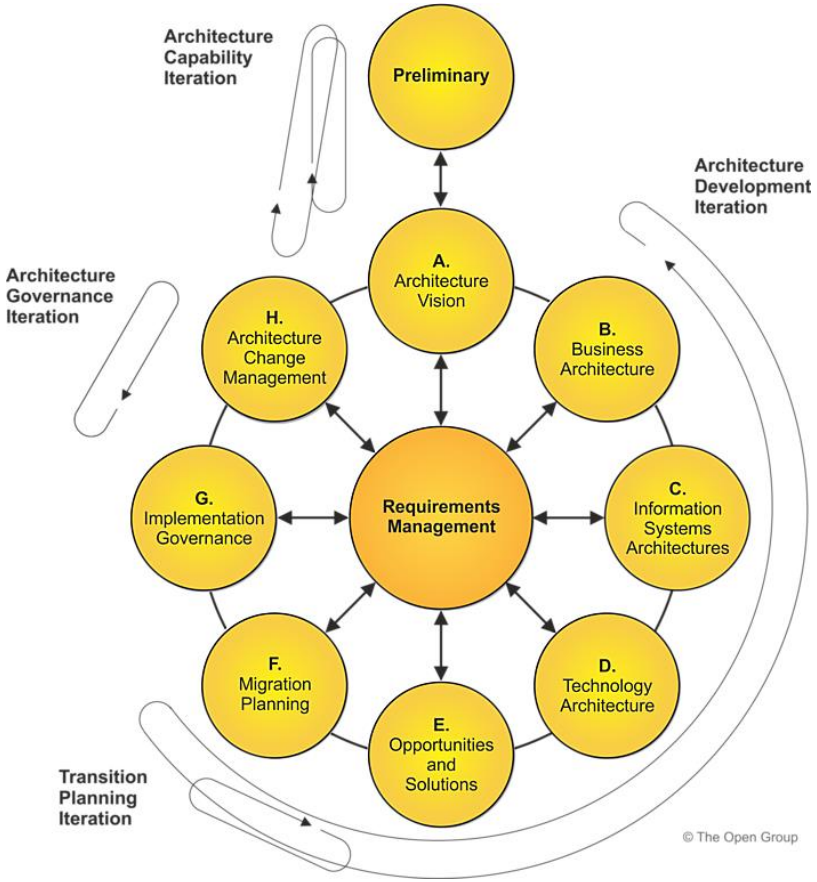
In this style, an assessment of the baseline landscape is used to identify problem areas and improvement opportunities. This process is most suitable when the baseline is complex, not clearly understood, or agreed upon.

Target first

The target solution is elaborated in detail and then mapped back to the baseline to identify change activity. This process is suitable when a target state is agreed at a high-level and where the enterprise wishes to effectively transition to the target model.

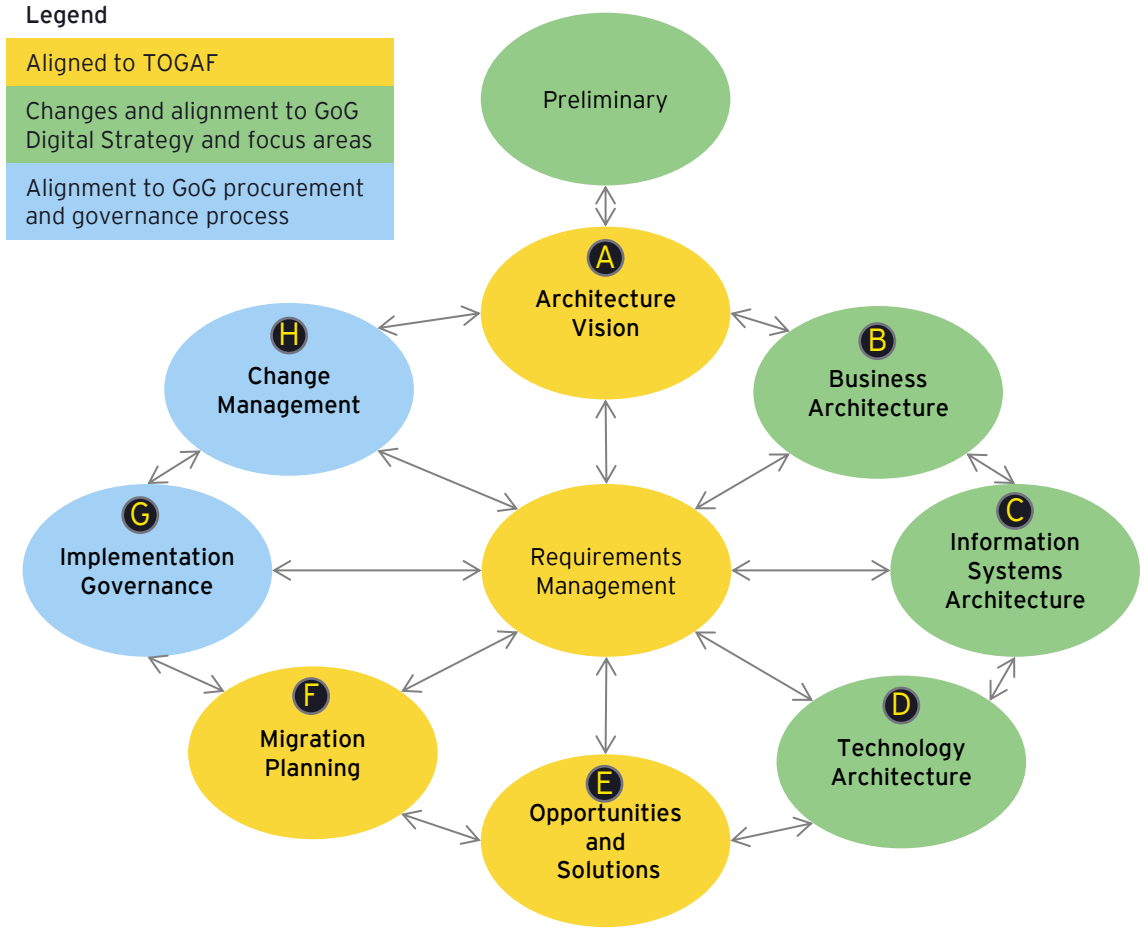
For the GoG context, we believe that the baseline state of business architecture is complex from a government perspective. It is important to clearly identify the problems to be addressed through digital transformation. Hence, it is proposed to apply the baseline-first approach for developing the architecture views.

In this view, for phase B (Business architecture) to Phase D (Technology architecture), the baseline is studied and developed across the organization scope. This is usually followed with a maturity assessment and readiness assessment toolkit which allows the architects to identify gaps and improvement areas. These inputs are drawn to develop the target state architecture. If the changes are complex and large scale, transition architecture is developed to realise small, incremental changes to enterprise.



Tailoring TOGAF to develop Grenada's ADM

The structure of the Grenada ADM has been inspired by TOGAF ADM. However, based on the digital agenda and consultations with industry and government representatives, it is understood that specific architecture domains require specific attention. The baseline architecture is complex, and limited documentation is available. Therefore, it is proposed to undertake a baseline-first approach and structure all government business architectures towards a service delivery mindset.



1) Architecture capability (Preliminary and Phase A)

Architecture capability ensures that an organization has the right people, tools, and processes in place to manage enterprise architecture effectively. It focuses on building a solid foundation by defining principles, setting up repositories, and creating governance structures. This helps organizations align business and IT strategies while managing changes smoothly and delivering value over time.

2) **Architecture development (Phase B-D)**

Architecture development is the process of creating and refining the architecture needed to support an organization's goals. This includes defining a vision, developing business, data, and technology architectures, and identifying opportunities for improvement. Using TOGAF's structured method, this process ensures all aspects of the organization work together and helps create roadmaps for achieving future objectives.

3) Transition planning (Phase E-F)

Transition planning helps move an organization from its current state to its desired future state. It involves creating detailed plans for changes, identifying steps to achieve them, and ensuring smooth progress. This ensures that improvements are implemented gradually, avoiding disruptions to essential operations while staying focused on long-term goals.

4) Architecture governance (Phase G-H)

Architecture governance ensures that all architecture-related activities follow clear rules and standards. It oversees the design, changes, and implementation of architectures to ensure they align with the organization's goals. Governance brings consistency, accountability, and compliance, ensuring architecture efforts deliver meaningful results.

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