

Enterprise Architecture Governance

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Introduction

The Government of Rwanda under the leadership of RISA has undertaken to develop Enterprise Architecture Practice with the goal of establishing unified IT standards and practices across all public entities. The rationale behind this is the need for seamless and integrated IT solutions across government entities.

It is acknowledged that up until now, despite the close alignment of the services offered by different government entities, the respective IT functional units have applied different standards in developing and deploying solutions.

An assessment conducted in 2013 concluded that there is neither IT governance nor enterprise architecture in place within all public entities and by extension, there is practically no appropriate Enterprise Architecture Governance.

This scenario poses a challenge to the Government of Rwanda as it seeks to integrate IT solutions across all public entities.

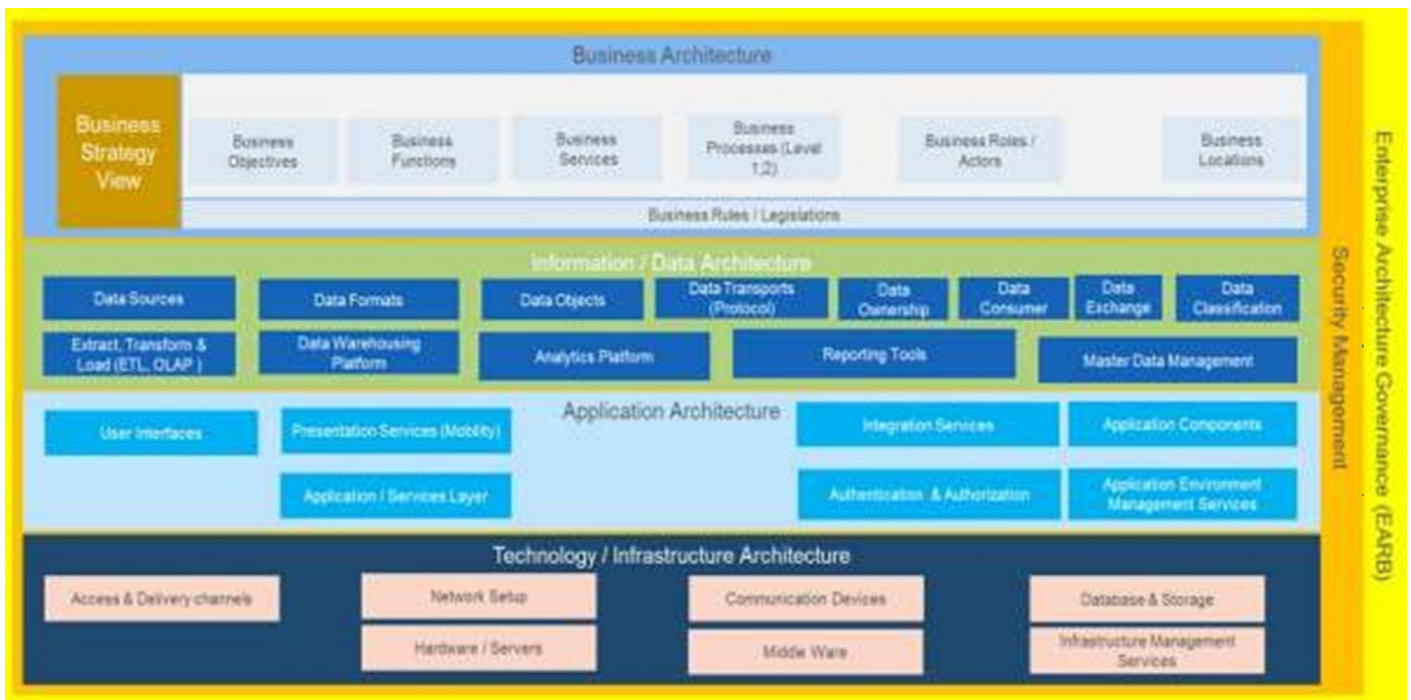
In order to address this challenge, RISA has been tasked to drive the implementation of enterprise architecture practices that will ensure the application of unified IT standards across all entities.

To achieve this, there is a need to define an Enterprise Architecture Framework (EAF) as well as the governance model that will drive its implementation.

Rather than applying a leading framework in its entirety, the government of Rwanda has elected to adopt and modify The Open Group Architecture Framework (TOGAF) to suit the specific needs of Rwanda.

Depicted in *Figure 20* below is the modified framework. The detailed description of the framework has been defined in the document titled 'Government of *Rwanda Enterprise*.'

Architecture Framework (RGEA)' which has also outlined the domains that enterprise architecture practice will cover.



The purpose of this document, therefore, is to outline the governance structures and roles that specific boards and committees will be entrusted with in ensuring adherence to set IT standards and practices.

Background

Management of an IT function is a complex undertaking. This is largely because IT encompasses a number of closely linked subdisciplines that need to be maintained in seamless alignment if the combined service offering is to deliver value to the target audience.

Success of the IT function therefore hinges on a number of interrelated activities, which are all coordinated through IT governance.

Within Government of Rwanda, IT governance should be taken both in the sense of provision of standards and policies for the entire ICT functional unit as well as governance around

Enterprise Architecture practice. This will be referred to as Enterprise Architecture Governance (EAG).

The primary purpose of **Enterprise Architecture Governance** is to ensure that an organization's IT investments are closely aligned to business goals and processes, so that limited IT resources are allocated to areas of highest impact on organizational performance. While the overriding concern of EAG is the effectiveness of the IT investments, the EA program itself needs to be governed as well, since an incorrectly developed EA could adversely impact the IT investment decisions that are based on it. The EAG described in this document has three primary objectives:

- Ensure that the EA program is properly managed and that it produces artifacts and plans that are truly representative of organizational goals and needs.
- Ensure that the IT investment decisions are being continually aligned with the EA Office from the point they are initiated until implemented
- Ensure that the IT decisions are made with consideration for integration goals of government Rwanda

To address these objectives, a well-defined Enterprise Architecture Governance Framework needs to be developed, agreed, communicated and implemented.

The following sections describe the proposed EA Governance Framework for each major component of the EA Program as well as the required governance bodies to ensure the implementation of the defined EAG framework.

EA Governance Implementation

The purpose of the EAG Framework is to provide policy guidance and advice and assistance in the definition, design, and implementation of Enterprise Architecture (EA) discipline and practice throughout the organization.

In addition, it serves as the core governance asset providing advocacy for EA integration of business and technology architectures across business units as well external boundaries.

The EAG establishes common terminology definitions and frameworks, including the Enterprise Architecture Framework and Technical Reference Models and Standards; and practical guidance to effectively implement and provide assurance for government of Rwanda technology solutions required to enable business requirements.

The Implementation of any EAG follows a number of steps. Typically, EAG requires formation of a number of governing bodies that share responsibility of overseeing operations of the IT functional unit.

These bodies are systematically arranged along the System Development Lifecycle (SDLC) to not only set and ensure adherence to set standards and principles but also to mitigate the risk of IT delivering a solution that may potentially be misaligned to the business requirements. Furthermore, the governance bodies vet and make recommendations on future IT investment plans.

The rationale behind having multiple governance bodies is to avoid a situation where a single body is entrusted with the responsibility of both making recommendation and approving the same. Best practice requires that there be multiple bodies that will validate each other's decision.

Within the Government of Rwanda, however, it has been noted that the IT functional units are relatively small. In the majority of cases, the IT team is composed of less than ten (10) FTEs.

This scenario makes it impossible to create multiple IT governance bodies in such organizations.

It is, however, still imperative that EA governance be instituted in all public entities. It is noted that all public entities have an IT committee whose terms of reference include making decisions for IT investment and operational enhancements.

It is proposed that the terms of reference for such a committee should be extended to include enterprise architecture governance. In this regard, the IT committee should also have the responsibility of ensuring adherence to set standards and application of EA policies.

If, however, this IT Committee is to be the only body responsible for making decision affecting an entity, governance would be a failure in principle for the following reasons:

1. The IT Committee's decisions need to be vetted by another independent body
2. The government of Rwanda's goal of bringing integration between public entities will need to be driven by a common goal across all public entities and therefore needs another body outside each of the entities to validate the decisions that would impact the integration

Since all the entities are organized in Sectors, it is therefore recommended that the IT committees for each entity be aligned to their respective Sectors. At central level, three additional decision making bodies will serve as escalation points for institutions' IT committees and Sector Working Groups. These are:

- RISA Team
- GoR Digitization Advisory Committee
- National ICT steering committee.

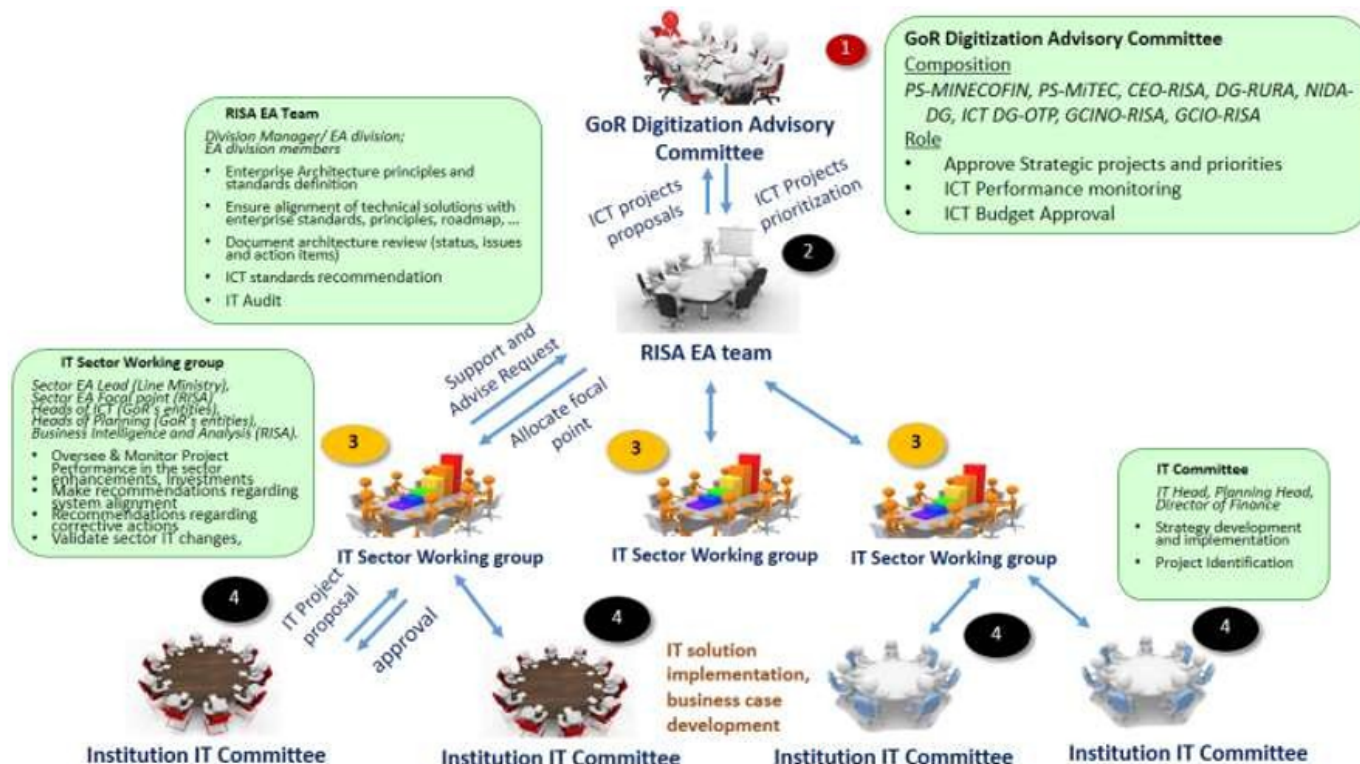
Described below is the proposed relationship:

1. The IT Committee will be responsible for making IT decisions for the respective public entity. These decisions will include future investment plans, system enhancements, solution development, etc.
2. Before the decisions are implemented, the IT Sector Working Group should be consulted. This is because the IT Sector Working Group would have a clear view of how each of the entities' architecture fits in with the sector mandate. In order to ensure that there is no disruption to the integration plans, the IT Sector Working Group will be the custodian of the sector architecture models. As such, it would be in a better position to approve decisions that would not compromise the integrations across sector entities.
3. In making its decision, the IT Sector Working Group will liaise with the RISA-EA Team. The RISA EA Team is responsible for setting architecture standards and policies for all
4. government entities. As such, it will vet decisions made by IT Sector Working Groups in line with the set standards, policies, and architecture goals of the government.
5. All major IT investment plans will be approved by the GoR Digitization Advisory Committee via the RISA-EA Team.
6. All strategic orientations in connection to ICT cross-institutional projects fall under the responsibility of the National ICT steering committee, which is composed of GoR's cabinet members.

The roles and compositions of each of the governance groups are depicted below.

National ICT Steering Committee (Cabinet Members)

National and regional ICT strategic projects updates High level strategic guidance and approval of cross-institutional projects



GoR Digitization Advisory Committee

This is the top decision making body within Government of Rwanda regarding IT initiatives. The core of the Advisory Committee's functional responsibility will rest on National ICT strategic projects approval, prioritization and monitoring in terms of cost and performance. It is therefore important to have the PS / Ministry of Finance as a permanent member of the GoR Digitization Advisory Committee to ensure alignment in terms of ICT projects financing.

The Advisory Committee receives recommendations from the RISA-EA Team on new projects and then advises on prioritization. It also reviews performances of projects as presented by the RISA-EA Team as well as provision of guidance for the Sector IT Working Group.

The ultimate role of the GoR Digitization Advisory Committee is to provide strategic direction to the IT function as well as ensuring that all ICT service delivery initiatives are aligned towards a common vision. In line with that and depending on matters being deliberated, the GoR's Digitization Advisory committee might invite key ICT players from private sector to take part in the discussions on need basis. This would help capture views of the private sector and strengthen the Public and Private Partnership.

Described below is a summary of the GoR Digitization Advisory Committee roles and responsibilities:

Accountabilities	- National ICT master plan approval - Strategic ICT projects approvals and prioritisation - National ICT project performance monitoring. - Guidance on major IT expenditures. - National ICT cost monitoring.	Suggested Composition	Permanent Secretary / MiTEC (Chair) Permanent Secretary/MINECOFIN CEO-RISA GCINO – RISA GCIO – RISA COO - RDB DG – RURA DG-NIDA DG/ICT – OTP Optional: Key Business Representatives to be invited on need basis.
Responsibilities	- Advise on overall IT capital expenditure levels based upon merit of initiatives and overall financial constraints	Escalation	Escalation point for: • RISA EA Team • Sector IT Working Group • IT Committee

	- Review IT performance metrics to track IT performance - Provide input into timing and scope of major IT initiatives. - Prioritisation of major initiatives - Provide approval of major IT initiatives - Review & approve National IT Strategy - Review and advise on expenditures for major initiatives or significant changes from plan - Review status of major initiatives and take action where appropriate - Review significant changes to IT standards, as recommended by the RISA EA team		Escalation to: • National ICT steering committee
Frequency	Quarterly (and on need basis)		

RISA EA Team

The RISA-EA Team is the custodian of architecture models and artefact for the entire Government of Rwanda. Its primary role is to set architecture principles and standards for all IT solutions. The EA Team should therefore, always be consulted when change is being considered in an environment. In this regard, when a business requirement is received for either developing, procuring a new solution or enhancements to an existing system, the requirements should be brought before this team for review.

In this role, the RISA-EA team is concerned with mapping the new business requirements to the current architecture landscape and ascertain on the impact that a new change would have across the government IT landscape. The role of the Team therefore transcends beyond setting standards for enterprise architecture. It also includes ensuring that the Government- wide architecture landscape is kept in line with the overall government initiatives. These initiatives include ensure application of common standards across all entities, maintaining the system alignment and integration among all Government entities, ensuring that investment plans are in line with overall government long term IT goals.

It is the RISA-EA Team that would approve the **‘build’** or **‘buy’** decisions. This is done after the business and functional requirements have been analyzed against the current IT solutions and investment planning. The assessment is done to ensure that the planned change is in alignment with the business requirement and IT capabilities.

As defined above, the RISA-EA Team should have powers assigned to a board i.e. powers to make decisions. This entails that it may reject or approve requests.

Furthermore, it will also play the role of an innovation board: thus, it should also fulfil an advisory role to IT and business on new innovations. In this regard, its actions should be proactive. Thus, the RISA -EA Team should always strive to bring innovative ways to enable business through provision of advice on trends in the technology field and also possible enhancements to current systems.

To ensure that the RISA-EA Team works well, it should be chaired by the Government Chief Innovation Officer (GCINO) or the Government Chief Information Officer (GCIO). The other members are the Enterprise Architecture Division Manager, the Digitization analyst, Information system security analyst, Business Process Re-Engineering Specialist, Data Architecture Specialist, Infrastructure Architecture Specialist, Systems integration senior engineer, Enterprise & application architecture specialist, Enterprise & application architecture analyst, Business intelligence and analysis specialist.

Summary of the composition and mandate is shown below:

Accountabilities		Suggested Composition	
	- Enterprise Architecture direction across infrastructure, applications, processes and tools - Enterprise Architecture roadmaps across technologies - Identification of innovation in IT that can help the business and awareness of new technologies		- Enterprise Architecture Division manager - Digitization analyst - Information system security analyst - Business Process Re-Engineering Specialist - Data Architecture Specialist - Infrastructure Architecture Specialist - Systems integration senior engineer - Enterprise & application architecture specialist - Enterprise & application architecture analyst - Business intelligence and analysis specialist.

Inputs	- IT Strategy - IT Investment and operating plan(annual) - Project proposals - New technology developments in the marketplace - Learning / experiences / insights from other competitors/ industries/partners	Outputs	- IT Strategy - IT Policy, Standards - EA framework and Architecture artefacts - IT Investment and operating plan(annual) - Project proposals - New technology developments in the marketplace - Learning / experiences / insights from other competitors/ industries/partners
Responsibilities	- Review and recommend Enterprise Architecture vision & roadmap, to deliver corporate strategic objectives - Define Enterprise Architecture standards, policies, principles and guidelines - Assess new project proposals for architectural compliance	Escalation	Escalation point for:
			IT Sector Working Group
			IT Committee
			Escalation to:
			GoR Digitization Advisory Committee

	- Facilitate collaboration across areas to exploit IT synergies and avoid duplication. - Bring learning / experiences / insights from other clients / industries to IT - Identify potential new business / IT opportunities and recommend new technologies and / or approaches - Work with business management / stakeholders to develop compelling business cases for new technologies		
Frequency	Quarterly (and on need basis)		

IT Sector Working Group

The IT Sector Working Group will have oversight over all IT initiatives undertaken by public entities that fall within it. This oversight responsibility includes the following:

1. Providing Sector specific IT direction
2. Monitor, advise and enforce IT alignment between different entities within the sector
3. Drive IT and EA initiatives across entities within the sector
4. Approve Business Cases for entities within the sector

NOTE:

All major IT projects in respective entities should be approved by the IT Sector Working Group. This will ensure the alignment of IT plans across the sector.

Projects will, however, be run and managed by respective entities.

Each project should also have its own project steering committee with the primary role of ensuring that the project is delivered on time, within budget and as per specifications.

The composition of the project steering committee will be determined by the respective project requirements. Each committee should, at a minimum include a Project Manager, Project Director, representative of the business, lead domain manager e.g. application manager, infrastructure manager etc.

Tabulated below are the responsibilities of the Sector IT Working Group.

Accountabilities		Suggested Composition	
	- Alignment of project portfolio to the IT strategy/ business performance - Maintain alignment of IT Investment within the sector		- Sector Enterprise Architecture Lead (Line Ministry), - Sector Enterprise Architecture focal point (RISA),

	- Approve large IT projects within the sector - Monitor and report on IT governance within the sector - Balance priorities across the Sector at National, Regional and Local levels		- Heads of Planning (GoR's entities in the sector), - Heads of IT (GoR's entities in the sector) - Business Intelligence and Analysis Specialist(RISA)
Inputs	- IT Programme Risks, Issues & Benefits - New project proposals and business cases - Forecast of resource supply	Outputs	- Approved proposal for projects / programmes - Prioritised proposals for projects / programmes - Forward Schedule of projects - Performance improvement actions - Resolution of escalated conflicts
Responsibilities	- Review, prioritise & approve IT investment decisions (up to a set value) - Ensure investment decisions align to IT and government-wide strategy - Develop and manage forward schedule of programmes & investments - Facilitate resolution of conflicting priorities amongst functional / geographic areas - Assign accountabilities for programmes - Supervise delivery of the portfolio of programmes and projects	Escalation	Escalation point for: - IT Committee Escalation to: - GoR Digitization Advisory Committee - RISA-EA Team
Frequency	Quarterly (and on need basis)		

IT Committee

The IT Committee’s primary role is to ensure all IT projects within respective entities are well coordinated and aligned to the overall strategic goals of the entity.

As such, the committee will be entrusted with the responsibility of defining the IT Strategy of the entity, setting up the enterprise architecture practice within the entity, documenting and maintaining the architecture models and artefacts, making IT investment plans and decisions per entity, ensuring effective and efficient IT project executions.

Tabulated is the summary of the role and deliverables of the committee.

Accountabilities	- Define the IT Strategy. - Define IT performance matrices - Define composition and terms of reference for project steering committees within the entity - Develop IT budgets - Set up and monitor the operations of the enterprise architecture team within the entity - Maintain architecture models and artefacts - Develop business cases for new projects within the entity - Approve new IT projects	Suggested Composition	Head of IT (Chair) Planning Head, Director of Finance
Inputs	- Project scope and plan - Project status - Project issues, risks, dependencies - Project budget - Resource requirements	Outputs	- Project phase closures (incl. Deliverable sign offs) - Escalated issues and risks (as necessary) - Resource requests - Management reports on status of projects to Portfolio & Programme Governance Committee

Responsibilities	- Ensure that the project proceeds to plan and budget and identify corrective actions where required	Escalation	Escalation point for: · Project Steering Committee
	- Review & approve or escalate project scope changes - Review project quality & progress against business case		Escalation to: · IT Sector Working Group

Project Steering Committee (per project)

The Project Steering Committee is responsible for on-going project management. It is set specifically for each project. Its prime role is to provide governance and measuring project performance against set goals, budget management.

The composition of the project steering committee will be determined by the size and goals of the project.

Since all projects are approved by the IT Committee, the project steering committee will receive its terms of reference for the IT Committee and will also report to the same.

Enterprise Architecture Documentation

This “Rwanda Digital Government Strategy and Governance” document describes at high level the architecture of the “Digital Government Platform” which seeks to establish a common integration and communication point for all GoR’s IT systems, setting integration and interoperability standards.

The “Rwanda Digital Government Strategy and Governance” proposes also a governance structure which should be implemented in order for GoR’s entities to comply with the standards set for integration with the “Digital Government Platform”.

In addition to the Governance Structure the following complementary documents have been developed to fully guide GoR’s entities in the selection and development of IT systems for ensuring proper alignment with business requirements, proper scoping, and compliance with interoperability standards and integration standards with the “Digital Government Platform”:

The “**Blueprint Development Guidelines for the Government of Rwanda**”: The purpose of these guidelines is to help public entities and GoR’s private partners to have a common understanding of Enterprise Architecture practice and to guide the systematic mapping of the institution’s IT landscape (Blueprint) in clear steps namely: the AS-IS situation, the To-Be situation, the Gap analysis and the Roadmap. The institution’s IT blueprint is a basic requirement for RISA’s approval and MINECOFIN’s funding for IT projects.

The “**Government of Rwanda Enterprise Architecture Framework (RGEA)**”: This document defines the core purpose and complete description of “Enterprise Architecture”. It outlines the boundaries, approach and notation that is used to model the enterprise architecture within Rwandan public entities

The “**The Government of Rwanda Enterprise Architecture Standards**”: It is expected that each Public Entity will document their own enterprise architecture based on the guidance provided in the “Blueprint development guidelines for the Government of Rwanda”. This document provides standards that should be adhered to while documenting the different “Enterprise Architecture components”.

The “**Rwanda Enterprise Architecture Principles**”: The Enterprise Architecture Principles describe how RISA plans to design and deploy information systems across all government entities. The prime goal of Enterprise Architecture is to define standards through which IT implementation across government institutions become seamlessly aligned. The unified standards across all entities will serve to streamline and reduce the complexity of IT investment decisions.

In this regard, principles are used to:

1. Provide guidelines in solution designing, development, implementation, and support
2. Evaluation of suppliers and service delivery partners
3. Evaluation of products and services
4. Support evidence-based decision-making.

5. Help define functional requirements