

NorviaONE

Enterprise AI Knowledge Platform

Business Requirements Document

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Client	Republic of Norvia
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Document Information

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Revision History

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1.0	Aug 2025	Ankit Gangrade	Initial draft

1. Executive Summary

NorviaONE is a multi-tenant enterprise AI knowledge platform built for the government departments of the Republic of Norvia. The platform enables employees across five government bodies to query institutional documents using natural language and receive instant, accurate, cited answers powered by Amazon Bedrock. The system is built on OutSystems ODC (One Developer Cloud) and follows a shared-database, row-level multi-tenancy model, ensuring complete data isolation between government tenants. A Super Admin BackOffice application manages tenant onboarding, while each department's Tenant Admin independently manages their users and document library.

KEY OUTCOME: Reduce time spent searching documents by 70%, while maintaining data sovereignty and compliance through strict tenant-level isolation enforced at every query.

2. Business Context & Problem Statement

Government employees across Norvia's five departments manage thousands of documents - monetary policy frameworks, health guidelines, logistics SOPs, and regulatory circulars. These are stored in shared drives and disparate systems with no unified search or intelligent access layer.

Key Pain Points

- Employees spend 30-60 minutes per day searching for answers in large document repositories.
- New employees have no reliable way to find procedural knowledge without senior guidance.
- Critical policy updates are buried in lengthy PDF reports; staff miss key changes.
- Departments cannot share knowledge safely due to confidentiality requirements.
- No audit trail exists for information access or document queries.

NorviaONE resolves this by providing a secure, department-scoped conversational AI layer over each tenant's

3. Project Scope

3.1 In Scope

- Multi-tenant platform on OutSystems ODC serving 5 government departments.
- NorviaONE BackOffice - web app for Super Admin (tenant and user management).
- NorviaONE - web app with AI assistant and tenant administration modules.
- NorviaMobile - mobile app with AI chat interface (iOS 16+ / Android 12+).
- Document upload (PDF, Word) with Amazon S3 storage and Bedrock ingestion.
- Conversational AI query with document scope selection and source citations.
- Chat session history with create, rename, and delete functionality.
- Role-based access control: Super_Admin, Tenant_Admin, Tenant_User.
- Built-in documentation library within both applications.

3.2 Out of Scope

- Real-time data feeds or live API integration with government backend systems.
- Video or audio document processing.
- Cross-tenant queries or shared knowledge bases between departments.
- Custom LLM fine-tuning (Amazon Bedrock Foundation Models used as provided).
- Email or push notification system for document updates.
- BackOffice administration via mobile application.

4. Stakeholders

Role	Group	Responsibility
Platform Owner	NorviaONE Team	Overall platform strategy, development, and hosting
Super Admin	IT Operations - Norvia	Tenant onboarding, super-admin user management
Tenant Admin	Dept IT Heads (5 depts)	Manage users, upload documents, manage categories
Tenant User	Dept Employees (100+)	Use AI assistant, manage own chat history
IT Operations	Republic of Norvia IT Dept	Infrastructure, S3/Bedrock access, security oversight

5. Application Overview

NorviaONE BackOffice

Technology: Reactive Web App (ODC)

Super Admin portal. Manages tenants and tenant users across all departments. Accessible only by Super Admin. Contains in-app documentation library (BRD, Architecture, ERD, Workflow, Features & Stories).

NorviaONE

Technology: Reactive Web App (ODC)

Main application for government department employees. Two modes: (1) AI Assistant - conversational interface for querying department documents with history management; (2) Administration - document upload, category management, and user management (Tenant Admin only). Also contains the in-app documentation library.

NorviaMobile

Technology: ODC Mobile App

6. Tenants

The following five government departments are the initial tenants of NorviaONE:

ID	Organization	Display Name	Initial Users
T001	Central Bank of Norvia	CBN Portal	24
T002	Life Insurance of Norvia	LIN Platform	18
T003	Ministry of Health Norvia	MHN Connect	31
T004	Public Work Department	PWD Desk	15
T005	United Logistics of Norvia	ULN Workspace	22

7. User Roles & Permissions

Role	App Access	Tenant Scope	Key Permissions
Super Admin	BackOffice only	All Tenants	Create/edit tenants; create any tenant user
Tenant Admin	NorviaONE	Own Tenant Only	Manage users; upload docs; manage categories
Tenant User	NorviaONE	Own Tenant Only	Use AI assistant; manage own chat history
Mobile User	NorviaMobile	Own Tenant Only	AI assistant chat interface on mobile

SECURITY RULE: TenantId is NEVER passed as a URL parameter or UI input. It is always resolved from the authenticated user session on the server side. All Server Actions enforce a mandatory TenantId filter on every data query.

8. Functional Requirements

ID	Module	Requirement	Priority
FR-001	BackOffice	Super Admin can create a tenant with Tenant Name, Organization Name, and Display Name	High
FR-002	BackOffice	Super Admin can edit tenant details and activate or deactivate a tenant	High
FR-003	BackOffice	Super Admin can create Tenant Admin and Tenant User accounts for any tenant	High
FR-004	BackOffice	Super Admin can update user details and change role or tenant assignment	Medium
FR-005	Users	Tenant Admin can create new users scoped to their own tenant only	High
FR-006	Users	Tenant Admin can update user details (Name, Surname, Employee ID, Role) and deactivate users	High
FR-007	Category	Tenant Admin can create and edit document categories with Name and Description	High
FR-008	Category	System prevents deletion of a category that is assigned to one or more active sources	High
FR-009	Source	Tenant Admin can upload PDF and Word (.docx) documents up to 50 MB per file	High

ID	Module	Requirement	Priority
FR-010	Source	System stores the uploaded document to Amazon S3 and saves the blob path in the Source record	High
FR-011	Source	System triggers Amazon Bedrock Knowledge Base ingestion job after successful S3 upload	High
FR-012	Source	Tenant Admin can deactivate a source; deactivated sources are excluded from AI queries	Medium
FR-013	AI	User can type a natural language question and receive an AI-generated, grounded answer	High
FR-014	AI	User can select document scope before querying: All Documents or specific source(s) from a dropdown	High
FR-015	AI	System displays a scope-wide notice when 'All Documents' is selected to indicate wide context	Low
FR-016	AI	AI response includes citations identifying which source document(s) were referenced	Medium
FR-017	Chat	System creates a new ChatSession record when user clicks 'New Chat'	High
FR-018	Chat	User can view chat history grouped by date (Today, Yesterday, Earlier this week)	High
FR-019	Chat	User can rename a chat session inline; new title saved immediately to ChatSession record	Medium
FR-020	Chat	User can delete a chat session with confirmation prompt; session and all messages removed	Medium
FR-021	Mobile	NorviaMobile app provides a chat page for AI assistant queries with same Bedrock backend	High
FR-022	Mobile	Mobile app supports document scope selection before submitting a query	Medium
FR-023	Docs	Both BackOffice and NorviaONE apps include in-app documentation (BRD, Architecture, ERD, Workflow, Features)	Low

9. Non-Functional Requirements

ID	Category	Requirement	Target
NFR-001	Security	Complete data isolation between tenants - zero cross-tenant data leakage under any scenario	Zero leakage
NFR-002	Security	TenantId resolved from authenticated session only; never from URL or UI form parameters	Server-enforced
NFR-003	Security	All data encrypted in transit using HTTPS/TLS 1.2 or higher	TLS 1.2+
NFR-004	Security	S3 documents encrypted at rest using server-side encryption (SSE-S3 AES-256)	AES-256
NFR-005	Security	All API keys and secrets stored as ODC Site Properties (encrypted) - never hardcoded	Code review gate
NFR-006	Performance	AI query response time from question submission to answer display	< 5 sec (P95)
NFR-007	Performance	Page load time for all application screens on a standard broadband connection	< 2 sec (P90)
NFR-008	Availability	Platform uptime measured monthly, excluding planned maintenance windows	99.5% SLA

ID	Category	Requirement	Target
NFR-009	Scalability	Concurrent active user sessions supported per tenant without performance degradation	100 users / tenant
NFR-010	Compliance	Audit log maintained for all admin actions - entity, actor, timestamp, and action type	All admin events
NFR-011	Usability	Mobile app fully operable without horizontal scrolling; all controls reachable by thumb	iOS 16+ / Android 12+

10. Integration Architecture

10.1 Amazon S3 - Document Storage

- Documents uploaded via browser are sent to ODC via a Server Action (binary + metadata).
- ODC calls the S3 PutObject REST API to store the document blob.
- Storage path: s3://norvia-one-{env}/{tenantId}/{sourceId}/{fileName}
- After upload, SourceBlobPath is saved in the Source entity. Binary is NOT stored in ODC.
- S3 bucket is private, SSE-S3 encrypted, accessible only via IAM role attached to ODC service account.

10.2 Amazon Bedrock - AI & Knowledge Base

- After S3 upload, ODC calls Bedrock StartIngestionJob API to ingest the document into the Knowledge Base.
- Bedrock chunks the document, generates vector embeddings, and stores them with TenantId and SourceId metadata.
- At query time, ODC calls Bedrock RetrieveAndGenerate API with the user's question.
- Query includes mandatory metadata filter: TenantId (always) + selected SourceId list (if scoped).
- Bedrock returns a grounded answer with citations; response stored in ChatMessage and returned to UI.

ODC Architecture Note: All Bedrock and S3 calls are made from ODC Server Actions using REST API connectors. Connection settings (endpoint URLs, API keys) are stored as ODC Site Properties - encrypted and never exposed in client-side code.

11. Core Data Entities

Entity	Primary Key / Foreign Keys	Key Business Fields
Tenant	TenantId (PK)	TenantName, OrganizationName, DisplayName, IsActive, CreatedOn
User (ODC)	UserId (PK)	Username, Email, Password [OutSystems built-in entity - do not add columns]
User_Extended	UserExtId (PK) UserId (FK) TenantId (FK)	Name, Surname, EmployeeId, Role, IsActive, CreatedBy, UpdatedBy, CreatedOn, UpdatedOn
SourceCategory	CategoryId (PK) TenantId (FK)	CategoryName, CategoryDescription, IsActive, CreatedBy, UpdatedBy, CreatedOn, UpdatedOn
Source	SourceId (PK) TenantId (FK) CategoryId (FK)	SourceName, SourceType, MimeType, Extension, SourceFileSize, SourceFileName, SourceBlobPath, SourceUploadedOn, IsActive, CreatedBy, UpdatedBy
ChatSession	ChatSessionId (PK) UserExtId (FK)	SessionTitle, CreatedOn, UpdatedOn, IsActive
ChatMessage	ChatMessageId (PK) ChatSessionId (FK)	MessageText, IsUserMessage (Bool), SourcesUsed (Text), CreatedOn

MULTI-TENANCY RULE: Every entity above (except the ODC built-in User) carries a TenantId column. All Aggregate

12. Constraints & Assumptions

12.1 Technical Constraints

- Platform must be built exclusively on OutSystems ODC (One Developer Cloud).
- AI engine must use Amazon Bedrock (Foundation Models and Knowledge Base feature).
- Document blob storage must use Amazon S3.
- Authentication must use OutSystems ODC built-in authentication in Phase 1.
- Mobile application must be an OutSystems ODC Mobile App.
- All deployment infrastructure is provided by the ODC cloud subscription for Republic of Norvia.

12.2 Business Constraints

- Initial deployment serves exactly five government department tenants.
- Each tenant manages its own document library independently - no cross-tenant document sharing.
- All tenant data must reside within the designated cloud region for Republic of Norvia.
- The platform must not return PII (Personally Identifiable Information) in AI query responses.

12.3 Assumptions

- Each tenant will designate at least one Tenant Admin before go-live.
- Documents are primarily in a language supported by the selected Bedrock Foundation Model.
- Tenant Admins are responsible for document quality and accuracy; the platform does not validate content.
- Amazon Bedrock Knowledge Base and S3 access are provisioned and configured before development begins.
- ODC organization subscription is active with sufficient app, user, and compute quotas.

13. Glossary

Term	Definition
ODC	OutSystems Developer Cloud - cloud-native, containerized OutSystems platform.
Tenant	A government department organization using NorviaONE as an isolated unit.
Super Admin	Platform-level administrator with access to all tenants via BackOffice only.
Tenant Admin	User with administrative access within a single tenant (users and documents).
Tenant User	Standard end-user within a tenant who uses the AI assistant.
Amazon Bedrock	AWS managed service providing Foundation Models and Knowledge Base (RAG) capabilities.
Knowledge Base	Amazon Bedrock feature that chunks, embeds, and retrieves documents for RAG queries.
RAG	Retrieval-Augmented Generation - AI technique grounding LLM answers in retrieved document chunks.
Amazon S3	Amazon Simple Storage Service - object storage used for document blob files.
Source	A document (PDF or Word) uploaded to NorviaONE and ingested into Bedrock Knowledge Base.
ChatSession	A named conversation thread containing a sequence of user and AI messages.
TenantId	Unique identifier assigned to each tenant; mandatory filter on all business data queries.
Multi-Tenancy	Architecture where multiple tenants share the same application while their data is fully isolated.

Term	Definition
BRD	Business Requirements Document - this document.

End of Document

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