Software Requirement Specification (SRS): SSSI GrowthEngine Web App.

Project Identity: SSSI-GE-2026

Document Version: 2.5.6 (Full Integration)

Classification: Proprietary / Internal Use

Standard: IEEE 830-1998 (Modernized for Enterprise SaaS)

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1. Introduction

1.1 Mission Statement

The **SSSI GrowthEngine** is not merely a database; it is a proactive revenue catalyst. Its mission is to eliminate "dead time" in the sales cycle through automated lead routing, real-time activity intelligence, and an event-driven architecture that ensures no lead is left untouched for more than 72 hours.

1.2 System Objectives

- **Centralization:** Transition from fragmented .xlsx and .csv files to a single, normalized relational database.
- **Velocity:** Automate the hand-off from lead generation to outreach using a round-robin engine.
- **Visibility:** Provide executive leadership with real-time weighted pipeline forecasting ($Expected\ Revenue = Deal\ Value \times Stage\ Probability$).
- **Accountability:** Enforce immutable audit trails and hierarchical data access.

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2. System Architecture & Product Perspective

2.1 Technical Stack (Architectural Constraints)

- **Frontend:** React.js / Next.js (Admin Dashboard & Kanban).
- **Backend:** Node.js (Express) or Python (FastAPI) utilizing an asynchronous event loop.
- **Database:** PostgreSQL (for relational integrity) with Redis for caching high-frequency tracking events.
- **Architecture:** API-First, Microservices-ready. The "Brain" (Automation Service) operates as an independent worker listening to a Message Queue (RabbitMQ/Kafka).

2.2 User Persona Definitions & Permissions

The system enforces **Strict Hierarchical RBAC**:

Persona	Data Visibility	Functional Permissions
Admin (CTO/Director)	Universal (All Records)	Full CRUD, User Management, Logic Config, Global Exports.
Sales Manager	Team-Level (Direct Reports)	View Team Pipeline, Reassign Leads, Performance Analytics.
Sales Rep	Assigned Only	Create/Edit Leads, Log Activities, Drag Deals in Kanban.
Intern	Assigned Only (Restricted)	Create/View Leads, Cannot Delete Records, Email from Templates.

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3. Functional Requirements: The Core Modules

3.1 Module A: Unified Entity Management (Phase 1)

- **FR-A.1: Contact/Company Schema:** The system **Must** support normalized tables. A Contact record **Must** be linkable to one Company, while a Company record **Must** support a One-to-Many relationship with Contacts.
- **FR-A.2: Smart Search:** The system **Must** implement a global search using indexing (GIN/B-Tree) to return results for names, emails, or phone numbers in $< 150ms$.
- **FR-A.3: CSV Bulk Ingest:** The system **Must** provide a mapping interface to import legacy spreadsheet data, validating for duplicate email addresses before committing to the DB.

3.2 Module B: Pipeline & Deal Flow (Phase 1 & 2)

- **FR-B.1: Kanban Board Logic:** The board **Must** support customizable stages. Dragging a card **Must** trigger an immediate DB update and an "Activity Log" entry.
- **FR-B.2: Weighted Forecasting:** The system **Should** automatically calculate the value of each stage.
  - *Formula:* $\sum (Deal\_Value \times Stage\_Weight)$
- **FR-B.3: Optimistic Locking:** The system **Must** check record versioning. If two users edit the same deal, the user with the stale version **Must** be blocked from saving to prevent data corruption.

3.3 Module C: The "GrowthEngine" Automation (Phase 2)

- **FR-C.1: Round-Robin Lead Distribution:**
  - The system **Must** maintain a Rep_Queue.
  - New Leads **Must** be assigned to the next available Rep marked as "Active."
  - The system **Should** support "Weighted Round-Robin" where specific Reps (e.g., Senior Tier) receive a higher ratio of leads.
- **FR-C.2: Stale Lead Trigger:**
  - **Must** run a background job every 12 hours.
  - If Last_Activity_Date > 3 days, trigger an **Omni-channel Alert** (Email + In-App Notification) to the owner.
  - If Last_Activity_Date > 10 days, move lead to **"Cold Pool"** and unassign.
- **FR-C.3: Visual Workflow Builder:** Admins **Must** be able to define triggers based on deal value.
  - *Example Logic:* IF Deal_Value > 50000 THEN CC_Manager = TRUE.

3.4 Module D: Communication Intelligence (Phase 2)

- **FR-D.1: Pixel Tracking Engine:** The system **Must** generate a unique UUID for every outbound email to track "Opens."
- **FR-D.2: Lead Scoring Algorithm:** The system **Must** calculate a Lead Score (0-100).
  - +10 points for a link click.
  - +5 points for an email open.
  - -20 points for 5 days of silence.
- **FR-D.3: Liquid Template Variables:** Outbound emails **Must** support dynamic mapping: {{lead.first_name}}, {{deal.closing_date}}.

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4. Non-Functional Requirements (Technical Constraints)

4.1 Security & Compliance

- **NFR-S.1: Immutable Audit Trail:** Every field-level change **Must** be recorded in an audit_logs table (Timestamp, Actor, Field, OldValue, NewValue). This table **Must** be append-only.
- **NFR-S.2: Encryption:** Data **Must** be encrypted at rest using AES-256 and in transit via TLS 1.3.

4.2 Performance & Scalability

- **NFR-P.1: API Latency:** 95% of API requests **Must** resolve in $< 300ms$.
- **NFR-P.2: Concurrency:** The system **Must** support 50 concurrent write operations without deadlocks.

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5. Detailed Data Dictionary (Key Entities)

5.1 Tables & Relationships

Table Name	Primary Key	Key Fields	Relationships
Companies	comp_id	Name, Domain, Industry, Revenue.	1:N with Contacts.
Contacts	cont_id	Name, Email (Unique), Phone, Job_Title.	N:1 with Companies.
Deals	deal_id	Value, Stage, Closing_Date, Probability.	N:1 with Companies.
Activities	act_id	Type (Call/Email/Note), Content, Timestamp.	N:1 with Deals/Contacts.
Audit_Log	log_id	Actor_ID, Action, Change_Payload, IP.	Independent (Global).

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6. System Workflows (Logic Flows)

6.1 Lead Ingestion Flow

1. Lead enters via API/Manual Entry.
2. System checks for Duplicate Email.
3. If unique, **Round-Robin Service** selects the next available Sales Rep.
4. Rep receives a **Push Notification**.
5. Lead Score is initialized to 10 (Base).

6.2 Deal Stale Flow

1. Cron job scans Deals table.
2. If Updated_At < Current_Date - 3 Days:
   - System flags record as is_stale = TRUE.
   - Automation engine triggers "Re-engagement" task for the Rep.
   - If ignored for 48 hours, **Sales Manager** receives an escalation email.

7. Strategic Implementation Roadmap

Milestone 1 (Foundations):	Core CRUD, PostgreSQL Schema setup, and SSO Auth.
Milestone 2 (Sales Desk):	Kanban Board implementation and Activity logging.
Milestone 3 (The Brain):	Round-robin engine and Stale lead triggers.
Milestone 4 (Intelligence):	Email tracking pixels and AI-based Lead Scoring.