NGBF Adventist Integrated Management Information System (NGBF-IMIS)

Technical Design & Solution Proposal

By David S Kachila

davidskachila@gmail.com David S Kachila +255 620 517 139

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1.Executive Overview

The NGBF Integrated Management Information System (NGBF-IMIS) is a modern, cloud-based, service-oriented platform designed to digitally transform administrative, financial, and ministry operations across NGBF Adventist Field.

The system focuses on:

- Operational efficiency
- Centralized governance
- Scalable architecture
- Data-driven leadership
- Security and compliance

2. Current Challenges (Technical Perspective)

Area	Limitation
Data Management	Dispersed data (paper, spreadsheets, messaging apps)
Reporting	Manual compilation, delayed insights
System Integration	No unified platform
Scalability	Existing tools cannot scale with growth
Governance	Weak audit trails & access control
Availability	Data inaccessible in real time

3. System Objectives

System Objectives Summary Table

No.	Objective	Technical Focus	Measurement Indicator
I	Establish an authoritative Single Source of Truth (SSOT)	Centralized master data architecture	data consistency
II	Optimize administrative efficiency by ≥50%	Workflow automation and validation	process time reduction
III	Enable real-time analytics and decision intelligence	BI layer with near real-time data processing	data latency
IV	Enforce role-based, auditable governance	RBAC, approval workflows, audit logs	100% traceable actions
V	Support horizontal and vertical scalability	Stateless services and scalable infrastructure	10× growth without redesign
VI	Ensure high availability, security, and data integrity	HA architecture, encryption, backups, DR	≥99.5% system uptime

The system will provide a single, trusted place for all church, membership, financial, and program data. It will save time and reduce mistakes by automating tasks like data entry, approvals, and reporting. Leaders will be able to see important information quickly through real-time dashboards and reports, helping them make better decisions.

The platform will make sure that only authorized people can do certain actions and that all activity is recorded for accountability. It is built to grow with the organization, handle more users and data, and stay secure and reliable at all times.

4. Functional Architecture

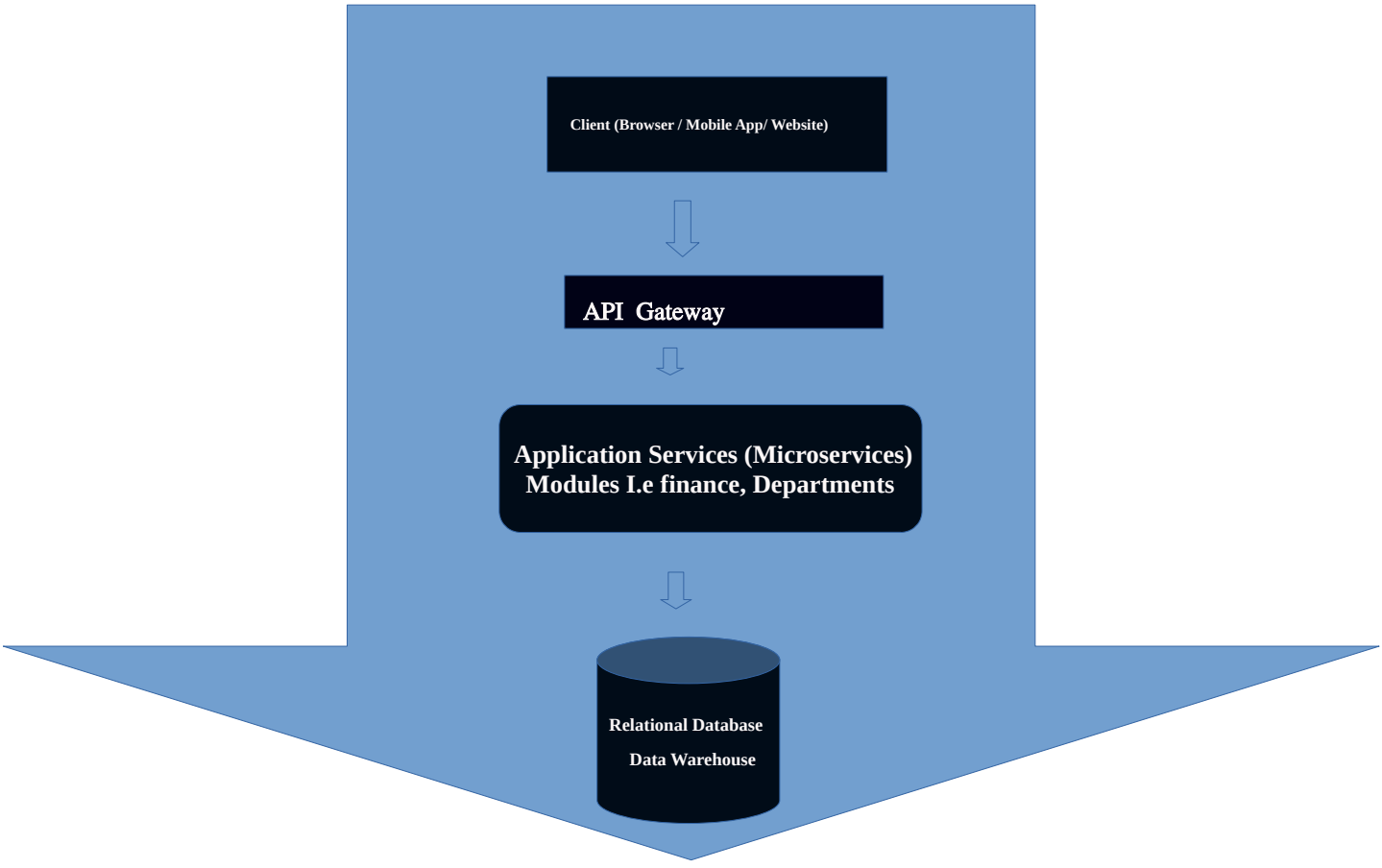
4.1 Modular System Design

The system will use a modular architecture, allowing independent development, scaling, and maintenance.

Core Modules:

- Identity & Access Management (IAM)
- Membership Information System (MIS)
- Financial Management System (FMS)
- Department & Program Management
- Reporting & Business Intelligence (BI)
- Communication & Notification Engine

5. Technical Architecture



5.1 High-Level Architecture

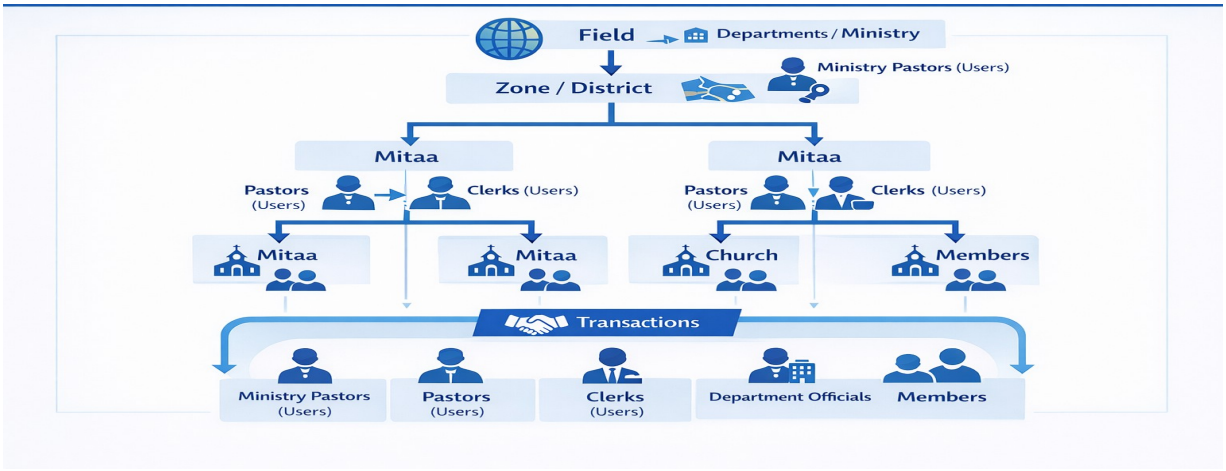
5.2 Technology Stack (Recommended)

Layer	Technology
Frontend	React / Vue (Responsive Web)
Backend	RESTful APIs (Laravel)
Authentication	OAuth 2.0
Database	MySQL
BI & Analytics	Built In Analytics Module or Power BI
Hosting	Shared Server Hosting
CI/CD	GitHub
Monitoring	

6. Data Model Overview

Key Entities:

- Member
- Household
- Church
- Mitaa
- Zone/ District
- Field
- Department
- Transaction
- Event
- User
- Role



Relationships:

The system organizes data in a clear hierarchy. At the top is the Field, which contains multiple Zones/Districts, and each zone has several Churches. Each church has Households, and each household has one or more Members. This keeps all membership information connected to the right church and area.

The system also tracks Transactions and Events, which are linked to the church or department that handles them. Users have assigned Roles, and each role controls what they can do in the system. This setup keeps the system organized, secure, and easy to manage.

7. Security & Governance Framework

7.1 Access Control

- Role-Based Access Control (RBAC)
- Least-privilege principle
- Multi-level approval workflows

7.2 Audit & Compliance

- Full activity logging
- Financial audit trails
- Change history tracking
- Compliance with church data confidentiality standards

8. Performance & Scalability

Scalability Strategy

- Stateless services
- Load balancing
- Database indexing & query optimization
- Caching (Redis)

Performance Targets

- Page load time < 2 seconds
- API response time < 300ms (avg)
- System uptime ≥ 99.5%

9. Reporting & Analytics Layer

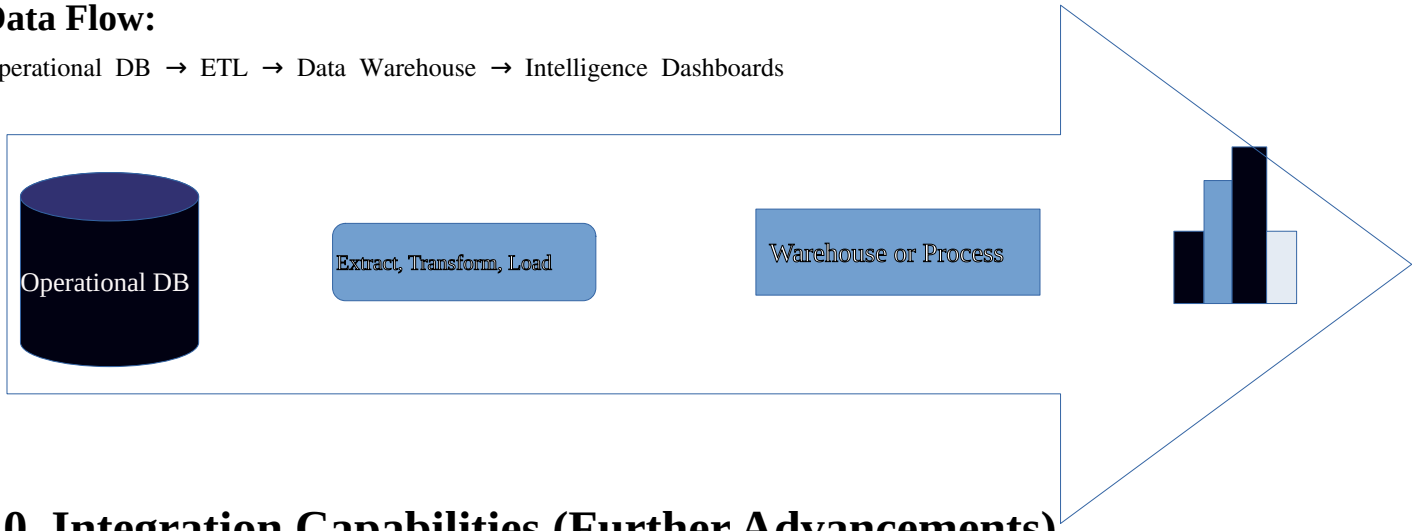
Capabilities:

- Real-time dashboards
- Drill-down analytics
- KPI tracking:
    - Membership growth
    - Tithe trends
    - Evangelism outcomes

  Export to Union / Division formats

Data Flow:

Operational DB → ETL → Data Warehouse → Intelligence Dashboards



10. Integration Capabilities (Further Advancements)

- Mobile money (M-Pesa, Airtel Money – future)
- SMS gateways
- Email services
- Union / Conference systems
- Accounting software (optional)

11. Implementation Methodology & Timeline

The implementation follows a phased approach to ensure structured development, testing, and deployment while minimizing disruption to operations. The total timeline is 4 months.

Phase	Duration	Activities / Deliverables	SMART Goals
Phase 1: Discovery & System Design	2 weeks	• Stakeholder workshops • Business process mapping • Technical specification documentation	Define all system requirements with 100% stakeholder alignment; produce detailed design ready for development
Phase 2: Core Platform Development	4 weeks	• Identity & Access Management (IAM) • Membership & organizational structure modules	Implement IAM & membership modules with role-based access and ≥95% test coverage; ensure hierarchical structure aligns with field data
Phase 3: Financial & BI Modules	3 weeks	• Transactions module • Dashboard & reporting system	Deploy financial tracking and reporting modules with real-time analytics and automated dashboards; validate ≥95% data accuracy
Phase 4: Pilot & Optimization	2 weeks	• Pilot in selected districts • Performance tuning • Security hardening	Test system with ≥80% of key functionalities in pilot districts, optimize performance (<2s response time), enforce full security controls
Phase 5: Field-Wide Rollout	3 weeks	• Data migration • User training • SLA-based support	Achieve 100% data migration, complete user training for all districts, and establish support with SLA adherence ≥95%

Total Duration: 3-4 months (16–18 weeks)

12. Operational Model

The operational model ensures centralized control with decentralized data ownership and clear responsibilities:

- Central System Administration: IT team manages core infrastructure, platform updates, and security monitoring.
- District-Level Data Ownership: District administrators manage membership and program data for their areas, ensuring accountability and local accuracy.
- Role-Segmented Responsibilities: User access is defined by roles to maintain security, governance, and task clarity.
- Continuous Improvement Cycle: Regular feedback, performance monitoring, and updates ensure the system evolves to meet operational needs and maintains efficiency.

14. Future-Ready Enhancements

- Progressive Web App (PWA): Access the system easily on any device, even offline.
- AI-Assisted Reporting: Automate insights and highlight key trends.
- Predictive Membership Trends: Plan growth and resource allocation based on forecasts.
- GIS Church Mapping: Visualize the location and distribution of churches.
- Digital Credentialing: Streamline user verification and role management for secure access.

15. Conclusion

The NGBF-IMIS provides a modern, efficient, scalable, and secure digital backbone for NGBF Adventist. It positions the Field to manage growth, enhance accountability, and support mission-driven leadership through technology.