**Detailed Functional & Technical Requirements Document**

**Project:** Odoo ERP Integration for Safaricom Telecom  
**Date:** [Insert Date]  
**Version:** 1.0  
**Author:** [Name]

**A. Introduction**

* **Purpose:** Define detailed functional and technical requirements for integrating Odoo ERP modules with telecom OSS/BSS systems and Mobile Money platforms to support billing, CRM, finance, procurement, and service management.
* **Scope:** Covers requirements for Odoo customization, data flows, API integrations, data migration, security, performance, and compliance.

**B. Functional Requirements**

| **ID** | **Requirement Description** | **Priority (H/M/L)** | **Source / Stakeholder** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| FR-001 | Billing module must support telecom-specific tariffs including prepaid, postpaid, and bundle offers | High | Billing Department | Accurate calculation of usage charges and discounts; supports real-time billing adjustments |
| FR-002 | CRM must provide a 360-degree customer view integrating data from OSS/BSS and Mobile Money transactions | High | Customer Service | Customer agents can view complete account and transaction history in one interface |
| FR-003 | Finance module must generate regulatory-compliant financial reports and electronic invoicing | High | Finance Department | Reports comply with KRA and telecom regulations; invoices have audit trails |
| FR-004 | Procurement module to manage vendor contracts, purchase orders, and inventory lifecycle of telecom assets | Medium | Procurement Team | Real-time stock tracking and automated reorder alerts |
| FR-005 | Service Management must log, track, and escalate faults linked with network OSS data | High | Network Operations | Automated ticket creation on fault detection; SLA tracking |
| FR-006 | Mobile Money platform integration for real-time payment processing and reconciliation | High | Mobile Money Team | Transactions reflected instantly in billing and finance modules |
| FR-007 | User roles and permissions configured to ensure least privilege access across ERP modules | High | Security & Compliance | Role-based access controls implemented; audited regularly |
| FR-008 | Workflow automation for customer onboarding and disconnection processes | Medium | Customer Service | Automated approval and notification workflows with audit logs |
| FR-009 | System must support multilingual interfaces (English and Kiswahili) for end users | Low | HR / Training Department | Language toggle available; all UI elements translated |
| FR-010 | Support for mobile and web access to ERP portals with responsive design | Medium | IT Infrastructure | Accessible securely on desktop and mobile devices |

**C. Technical Requirements**

| **ID** | **Requirement Description** | **Priority (H/M/L)** | **Source / Stakeholder** | **Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| TR-001 | ERP must integrate with OSS/BSS systems using RESTful APIs with JSON data format | High | IT Architecture | Bi-directional data sync with latency under 5 seconds |
| TR-002 | Middleware to manage message queuing and orchestration between Odoo and OSS/BSS | High | Integration Team | Middleware supports retry, error logging, and monitoring |
| TR-003 | Data migration tools must support extraction, transformation, and loading (ETL) of legacy data with validation rules | High | Data Migration Team | Data accuracy > 99%; migration logs generated |
| TR-004 | System must be deployed on a scalable infrastructure supporting cloud and hybrid options | Medium | IT Infrastructure | Auto-scaling enabled; SLA 99.9% uptime |
| TR-005 | Security protocols to include OAuth 2.0 for API authentication and AES-256 encryption for sensitive data | High | Security Team | All API calls authenticated; data encrypted at rest and in transit |
| TR-006 | Audit logging must capture all key transactions with timestamp, user ID, and action details | High | Compliance Team | Logs tamper-proof and retained per regulatory requirements |
| TR-007 | Performance benchmarks: ERP should handle 10,000 concurrent users with max response time of 2 seconds | High | Performance Testing Team | Load test results meet or exceed benchmarks |
| TR-008 | Backup and disaster recovery processes must ensure RPO of 15 minutes and RTO of 2 hours | High | IT Operations | Automated backups and tested recovery plans |
| TR-009 | Support integration with Mobile Money APIs (e.g., M-PESA) with transaction security and error handling | High | Mobile Money Team | API calls handle exceptions gracefully and log failures |
| TR-010 | ERP system must comply with Kenya Data Protection Act and ISO/IEC 27001 security standards | High | Legal and Compliance | Compliance certificates and audit reports available |

**D. Data Flow Diagrams and Integration Architecture**

* Include high-level diagrams illustrating:
  + Data flows between Odoo ERP modules and OSS/BSS systems
  + API middleware orchestration
  + Mobile Money integration points
  + Security layers and access control mechanisms

*(Attach diagrams in appendix or reference linked documents)*

**E. Non-Functional Requirements**

| **Requirement** | **Description** | **Priority** |
| --- | --- | --- |
| Availability | System uptime 99.9% | High |
| Scalability | Support growth in users and transaction volumes | High |
| Maintainability | Modular codebase to facilitate upgrades and patches | Medium |
| Usability | Intuitive UI/UX to minimize training needs | Medium |
| Compliance | Adherence to all relevant regulations and standards | High |
| Performance | System response within 2 seconds under peak load | High |

**F. Assumptions and Constraints**

* OSS/BSS APIs are stable and available during integration.
* Legacy data quality is sufficient for migration.
* Regulatory requirements remain stable during project lifecycle.
* Vendor support and documentation for third-party systems are accessible.