**Resource & Budget Breakdown Structure (RBS & WBS)**

**Project:** Smart 5G Optimization & Deployment (S5GO-DI) – Safaricom

**A. Work Breakdown Structure (WBS)**

**Level 1 to Level 3 – Core Deliverables with Resource Estimates**

| **WBS Code** | **Task / Deliverable** | **Estimated Duration** | **Human Resources** | **Technical Resources** | **Cost Estimate (KES)** |
| --- | --- | --- | --- | --- | --- |
| 1.0 | Project Initiation | 2 weeks | PM, Legal, Finance | Docs, ERP Tools | 2,000,000 |
| 1.1 | Project Charter, Business Case | 1 week | PM, Governance Lead | Word, Excel | 500,000 |
| 1.2 | Stakeholder Analysis | 1 week | PMO Analyst | Power BI | 500,000 |
| 2.0 | RF Planning & Site Survey | 4 weeks | RF Engineers, GIS Analyst | Drones, GIS Tools | 6,000,000 |
| 3.0 | 5G Core & RAN Upgrade | 6 weeks | Network Eng., Vendors | RUs, CUs, Transmission | 18,000,000 |
| 3.1 | Core Infrastructure (vEPC, MEC) | 2 weeks | Cloud Eng., Telco Vendors | Core Switches, vEPC | 6,500,000 |
| 3.2 | RAN Hardware Deployment | 4 weeks | Field Techs, Installers | Antennas, Massive MIMO | 11,500,000 |
| 4.0 | AI/SON Integration | 5 weeks | Data Scientists, ML Eng., DevOps | GPUs, H2O.ai, Jenkins | 7,000,000 |
| 5.0 | Security & SDN Implementation | 4 weeks | SecOps, SDN Engineers | Firewall, API Gateway, Zero Trust | 5,000,000 |
| 6.0 | Monitoring, Dashboards, Testing | 3 weeks | QA, DevOps, Service Ops | Grafana, Prometheus, ELK Stack | 3,500,000 |
| 7.0 | User Awareness & Rollout | 2 weeks | Community Lead, CSR, Mktg | Comms Kits, Radio Ads, Events | 2,000,000 |
| 8.0 | Post-Implementation Review | 1 week | PM, Finance, QA | Survey Tools, Reports | 500,000 |
| **TOTAL** | — | — | — | — | **44,000,000 KES** |

**B. Resource Breakdown Structure (RBS)**

Categorized by **Human Resources** and **Technical Resources**

**1. Human Resources**

| **Role** | **Quantity** | **Unit Rate (KES/Month)** | **Total (3 months)** |
| --- | --- | --- | --- |
| Project Manager | 1 | 1,200,000 | 3,600,000 |
| Network Engineers | 4 | 800,000 | 9,600,000 |
| RF Planners & Surveyors | 3 | 700,000 | 6,300,000 |
| AI/Data Scientists | 2 | 1,000,000 | 6,000,000 |
| DevOps/SecOps Engineers | 3 | 850,000 | 7,650,000 |
| Field Technicians | 10 | 250,000 | 7,500,000 |
| Legal, Procurement, Finance | 5 | 400,000 | 6,000,000 |
| QA & Service Ops | 2 | 600,000 | 3,600,000 |
| CSR & Community Engagement | 2 | 300,000 | 1,800,000 |
| **Total HR Budget** | — | — | **52,050,000 KES** |

**2. Technical Resources**

| **Category** | **Items** | **Est. Cost** |
| --- | --- | --- |
| 5G RAN & Core Hardware | Massive MIMO antennas, vEPC servers, SDN switches | 25,000,000 |
| AI/ML Toolkits | H2O.ai, TensorFlow licenses, GPU Clusters | 5,000,000 |
| Monitoring Stack | Grafana, Prometheus, Alertmanager Setup | 2,500,000 |
| Cloud & Storage | Edge MEC, SD-WAN licensing | 4,000,000 |
| Comms & Training | Awareness kits, training platforms, event logistics | 2,000,000 |
| **Total Technical Budget** | — | **38,500,000 KES** |