**High-Level Network Pain Point Assessment Report**

**Project Title:**

Smart 5G Network Optimization – Pain Point Assessment Report

**Date:**

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**Prepared By:**

5G Network Engineering & Performance Team

**1. Executive Summary**

This report outlines major technical and operational bottlenecks affecting current 5G network performance across urban, peri-urban, and rural zones. It uses multi-source data (OSS, drive tests, customer complaints, and NOC logs) to isolate critical areas for optimization.

**2. Key Findings**

| **Pain Point** | **Description** | **Impact** | **Severity** | **Root Cause** |
| --- | --- | --- | --- | --- |
| High Interference Zones | High PRB utilization & SINR degradation in urban sites | Dropped calls, slow speeds | Critical | Dense deployments, sub-optimal antenna tilt |
| Mobility Failures | Handover failures >5% in cluster B | Video freeze, VoNR failure | High | Poor neighbor list optimization |
| Energy Inefficiency | Sites consume 18% more than planned | High OPEX, ESG non-compliance | Medium | Outdated sleep mode policies |
| Backhaul Congestion | High latency during peak hours | Streaming & gaming degradation | High | Limited midhaul capacity |
| AI/SON Misalignment | Conflicting parameter changes from legacy SON tool | Unstable KPIs | Medium | Lack of closed-loop control |

**3. Methodology**

* **Data Sources:** eNodeB/gNodeB KPIs, PCAPs, Field Logs, Drive Test Data, OSS
* **Tools Used:** Tems Discovery, QXDM, ZenOSS, AI-based anomaly detection
* **Time Frame:** Q1 2025 (January–March)

**4. Recommendations**

* Implement AI-guided interference mitigation
* Re-tune antenna downtilt based on heatmaps
* Upgrade AI/SON controller for better handover optimization
* Initiate energy-saving mode pilot on top 10 energy-intensive sites
* Expand midhaul to fiber in peak-congested zones