INDEPENDENT ENGINEER · KIGALI, RWANDA · SINCE 2007

From your own export to the root cause, with the evidence attached.



Eighteen years inside Rwanda's mobile cores: MTN, Tigo, Airtel and Ericsson Managed Services, with platform depth in **Ericsson and ZTE**. Since March 2026 I build what I always needed on shift: **Isaano**, an evidence-locked root-cause engine, and **26 self-serve diagnostic tools** for operators, banks, insurers, utilities, transport and government.

- 26 tools live
- Isaano in daily use
- 5G SA lab running

Try a tool free for 3 days

99.95% CS core availability, sustained **4 h → 15 min** diagnosis and RCA

72,430 verified counters **EN · FR · SW · RW**

BUILDING NOW

What I am building, and what it already proves

Every piece below started as a problem I met in production. Each one ends with something

you can check: a number, a test count or a public thread.

IN DAILY USE

Isaano · root-cause engine

Named after the Kinyarwanda *isano*, the link. It reads alarms, counters, traces and the vendor manual for the exact release, then writes the root-cause report, the evidence pack and the change procedure with rollback. When evidence is missing it asks for exactly what is needed instead of guessing.

> **4 h → 15 min** diagnosis and RCA time in production operations, with automation I built.

VERSION 2 · 2026

Manual-to-evidence pipeline

Turns a vendor documentation library into a verified dictionary that the engine is allowed to quote. Every counter and alarm passes the vendor's exact ID grammar before use; full-text plus semantic search; nothing answered from memory.

> **72,430** verified counters and **1,255** alarm codes, up from 18,131 counters in version 1 (2023–2025).

LIVE · 26 TOOLS

Self-serve diagnostic toolkit

Each tool reads one CSV export in your browser (nothing is uploaded) and returns a verdict, the evidence behind it and a summary for management: payment failures, reconciliation, OTP delivery, USSD journeys, call failure causes, power reliability, water losses, portfolio at risk, motor loss ratio, bus headways and more.

> Every number is computed from your file. Sample runs are free; your own file opens with a **3-day code**.

Open the catalogue →

RUNNING

5G SA reference lab

A standalone 5G core from AMF to SCP with gNB and UE simulators. I break it on purpose and record the recovery, so every 5G claim I make comes with a baseline, a fault and a measured recovery.

> **6/6** baseline · UPF failure injected · recovery in about **12 s**.

PROPOSALS OUT

Site energy baselines and MRV

A measured energy and emissions baseline method for shared tower estates, built so that efficiency projects can be financed and their savings verified.

> Method sized for a **1,467-site** shared estate; climate-finance briefs prepared for a lender, a development finance institution and a national green fund.

BUILT

Field and RAN tooling

SectorMap, a cell-sector KPI map for radio teams; an RF drive-test toolchain with 3GPP validity ranges and PCI conflict checks; a read-only network-element access and evidence tool; signalling log triage.

> Drive-test toolchain **27 tests** · NE evidence tool **21/21 tests** · cause values across **17 protocol families**.

AI SKILLS, APPLIED WHERE ANSWERS MUST BE RIGHT

Automation that refuses to guess

Network answers are judged by the next outage, not by how fluent they sound. My AI work is built around that: retrieval that can only quote the manual, gates that reject what cannot be

proved, and a human hand on every send.

Isaano · run log, abridged

ASK	UPF restart: sessions drop. How fast do they recover?
SOURCE	Gateway counters resolved to the manual for the exact release · ID gate passed
LAB	UPF fault injected in the 5G SA lab · recovery in about 12 s
CAUSE	First deviation → cause value → counterfactual checked
OPEN	DNS check at container level only: stated as open, not assumed
OUT	Root-cause report · evidence pack · change procedure with rollback and checks at T+30 min, 24 h and 7 days

Every claim traceable to a manual page, a trace line or a lab run · Prepared by Frutos

Retrieval that can only quote the source

Hybrid full-text and semantic search over vendor libraries; answers come from the manual for the named release, and counter or alarm IDs are checked against the vendor's grammar before they are used.

Fail-closed outputs

With evidence missing, the system returns the exact request (what, from which node, for which window) rather than a plausible answer. Confidence is labelled: proven, supported or unproven.

Guardrail verification for telecom agents

I test an agent's core-network answers against release documentation with adversarial cases locked to ground truth, and return a pass/fail report and a gate design. Ten working days, remote.

Agentic operations with a human on send

Scheduled runs scan regulators, tenders and news, and prepare drafts and evidence packs into one approval queue. Nothing leaves without my send.

Evaluation of the engine itself

Acceptance tests for injected instructions, citation traps, closed questions and computations, re-run after every revision.

Teaching it

AI for Telecom Core Operations, a five-volume handbook (184 pages); 18 incident playbooks with fix paths and verification gates.

YOUR STORY, YOUR TOOLS

Pick your world. Here is what I would do first.

Same method everywhere: your own export, the first deviation, the cause with its evidence,

the fix order and the money at stake.

MOBILE OPERATORS

The 3G switch-off is set for 30 June 2027, and it goes ahead only once VoLTE, emergency calls included, works reliably. MINICT, 27 Jul 2026

WHAT I BRING

VoLTE, IMS and core root-cause work across Ericsson and ZTE, device readiness by segment, and the site power that keeps it all up when the grid drops.

TRY FIRST

Sunset Readiness · Cause Decoder · Backup Autonomy · Site Energy · Link SLA

PROOF

CS core lead on a 54-node Ericsson estate carrying 665,000 Erlang at 99.95%; xGW, uMAC and DSC on cloud-native ZTE platforms in production; SRVCC and VoLTE cases solved in public.

First step: send one day of SIP, Diameter and Q.850 cause codes; I return the failure tree and the fix order in 10 working days.

Get a 3-day code

ERICSSON, ZTE, HUAWEI, NOKIA AND THEIR PARTNERS

Release-exact core expertise on the ground in Kigali, for delivery, acceptance and managed services, without adding headcount.

WHAT I BRING

Platform depth on Ericsson and ZTE; standards-based, multi-vendor work (3GPP, IETF, ITU) on any estate; acceptance evidence that customers sign the first time.

TRY FIRST

Cause Decoder · Sunset Readiness · Link SLA · PUE Lens · Backup Autonomy

PROOF

CS core SME lead in Ericsson Managed Services; ZTE iCX and iMG on TECS; a manual pipeline holding 72,430 verified counters; open-source fixes and a security report upstream.

First step: a one-page scope for one acceptance, migration or RCA backlog, priced before work starts.

Ask for a scope

BANKS, WALLETS, PAYMENT SERVICE PROVIDERS, SACCOS

Since 14 July 2026, eKash links every bank and e-money issuer for transfers and merchant payments: more counterparties to reconcile, every day. TechAfrica News, 13 Jul 2026

WHAT I BRING

The networks your payments, OTPs and USSD sessions ride on are the ones I ran for 18 years. I read your failures by cause, not by complaint.

TRY FIRST

Payment Decoder · Reconciler · Settlement · OTP Lens · Channel X-ray · ATM Uptime · Agent Float · SIM-Swap Window · PAR Lens

PROOF

Roaming SMS and OTP loss traced to subscriber state on the HLR and HSS, in public (thread 36930); signalling, Diameter and SMS paths from the core side.

First step: one day of transaction or OTP logs; I return where they fail, why, and the value at stake in 10 working days.

Get a 3-day code

INSURERS AND BROKERS

Motor third-party premiums could rise 20-30%: repair costs have more than doubled while tariffs stood still for five years. The New Times, 12 Oct 2026

WHAT I BRING

Segment loss ratios you can defend, claims flagged with the exact row that triggered each flag, and time-to-settle measured end to end.

TRY FIRST

Loss Ratio Lens · Claims Flags · Turnaround · Collection Rate · Staffing Lens

PROOF

The same evidence discipline as a network root cause: every finding traced to its source line, every number recomputed a second way.

First step: three years of policy and claims rows; segment loss ratios, credibility and the rate change by segment in 10 working days.

Get a 3-day code

POWER, WATER AND ENERGY COMPANIES; INDUSTRIAL PARKS

On 10 September 2026 senators raised frequent power interruptions after visiting schools and health facilities. The New Times, 10 Sep 2026

WHAT I BRING

Reliability indices by feeder, losses split between leaks and metering gaps, and backup sized from measured outages rather than nameplates.

TRY FIRST

Power Reliability · Meter Loss · Water Balance · Collection Rate · Backup Autonomy · PUE Lens · Fleet Fuel

PROOF

IEEE 1366 indices, the IWA water balance and ISO/IEC 30134-2 PUE built into the tools; an energy baseline method sized for a 1,467-site tower estate.

First step: three months of outage or meter records; the feeders, zones or sites to fix first, ranked by hours or cubic metres saved.

Get a 3-day code

MINISTRIES, AGENCIES, DIGITAL PUBLIC SERVICES

A digital public service is only as good as its slowest step: the code that must arrive, the API that must answer, the case that must close.

WHAT I BRING

End-to-end measurement of the citizen journey, from the SMS gateway to the back office, with targets your teams can own.

TRY FIRST

API Health · OTP Lens · Turnaround · Staffing Lens · Channel X-ray

PROOF

Author of a national 5G governance framework submitted to MINICT and MININFRA; a current-state verification matrix across five institutions.

First step: one month of OTP, API or case logs; the bottleneck, its cause and the fix order in 10 working days.

Get a 3-day code

BUS OPERATORS, LOGISTICS, FLEETS

Weekday bus riders in Kigali rose from about 200,000 to nearly 230,000 after the bus lanes opened. The New Times, 22 May 2026

WHAT I BRING

Excess waiting time and bunching per route, the timetable changes that cut them, and fuel that can be traced to the litre.

TRY FIRST

Bus On-Time · Fleet Fuel · Turnaround

PROOF

The measure London Buses uses for high-frequency routes (excess wait time), built into the tool and computed from your own departures.

First step: four weeks of departures and GPS data; the dispatch and timetable changes per route in 10 working days.

Get a 3-day code

DEVELOPMENT BANKS, FUNDS, LENDERS

Before you fund a tower estate, a fibre route or a fintech, know what the network and the numbers will really do.

WHAT I BRING

Technical due diligence on telecom, energy and payment assets, and measured baselines that make efficiency and climate finance verifiable.

TRY FIRST

Site Energy · Backup Autonomy · PAR Lens · Collection Rate · Power Reliability

PROOF

Climate-finance briefs for a lender, a development finance institution and a national green fund; 18 years of operating the assets you are asked to finance.

First step: the data room for one deal; a red-flag memo with evidence references in 10 working days.

Talk about a deal

FOUNDERS, HUBS, ACCELERATOR PROGRAMMES

Founders need production-grade answers on connectivity, devices, payments and power, at a founder's budget.

WHAT I BRING

Fixed-scope diagnostics, a 45-minute clinic with your own export, and hands-on 5G core training with my own lab and tooling.

TRY FIRST

API Health · OTP Lens · Payment Decoder · Sunset Readiness · Collection Rate

PROOF

14 full cases in a public casebook, 135 public answers and three corrections made in the open, left on the record.

First step: bring one export to a 45-minute clinic; leave with the answer and what to watch next.

Book a clinic

PROOF

Numbers from production, threads you can read

99.95%
CS core network availability, sustained on a 1+1 estate

−35%
recurring P2/P3 incidents after a process redesign

665,000
Erlang of traffic on a 54-node Ericsson CS core

25,000+
words of public diagnosis: 135 answers in 56 threads

ADVISED Roaming subscriber receives no SMS or OTP 36930

NARROWED Data stops after the 4G to 2G change 37073

CORRECTED SRVCC B2 thresholds that did not add up 36843

RESOLVED Handover fails, re-establishment succeeds 36955

ANSWERED Shortage of NR TDD 5 MHz channels 36820

REPORTED SIGTRAN security defect in an open-source stack Osmocom #7048

CAREER

Radio to core, operator to vendor, since 2007

2007–2013
Switch engineer, core and RF
MTN Rwanda · Tigo Rwanda

2013–2015
Standards and international roaming engineer
Ericsson Rwanda

2015–2023
Core network engineer, acting operations manager
Airtel Rwanda

2023–2025
CS core SME lead, acting operations manager
Ericsson Managed Services · MTN Rwanda

2025–2026
Senior core network expert (L6)
ZTE core · Airtel Rwanda

2026 →
Independent engineer and builder
Kigali · worldwide

WORK WITH ME

Small first step, fixed scope, then keep the tool

01
Trial
Three days, free. Ask for a code on WhatsApp and run any tool on your own export; the file never leaves your browser.

02
Read
Your full records, read with evidence: the cause, the fix order and the money at stake. Fixed scope and price, 10 working days.

03
Licence
Keep the tool for your team, set to your thresholds, with a monthly read-out for management.

04
Train
Hands-on 5G core and VoLTE training with my own lab and tooling; days and hours set with each team.

Send one export. Get one answer.

WhatsApp **+250 788 312 423** · call **+250 731 000 163** · fkamanzi@gmail.com

WhatsApp for a code