HORIZON NETWORKS

IRIS

NETWORK INTELLIGENCE

RAN Intelligence Platform for 4G and 5G Operators

See the network. Prove the cause. Act with confidence.

Production-ready | On-premises | Read-only to the network | 4G LTE · 5G NR · FWA



PRODUCT CATALOGUE · EDITION 2026

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More data than any team can read

Every cell reports hundreds of counters every fifteen minutes. Alarms, configuration changes, transport faults and customer complaints arrive in separate tools. The few events that matter are lost in the noise.

96
REPORTS PER CELL PER DAY

100s
COUNTERS PER REPORT

6+
DISCONNECTED TOOLS

CHALLENGE

Alarm and anomaly floods

Thousands of threshold breaches a day hide the few that affect customers.

Ranked by real traffic impact, grouped under the root event

CHALLENGE

RCA depends on individual experience

The cause of a degradation is found by memory and is hard to audit.

Structured cases with weighed evidence and a full audit trail

CHALLENGE

Changes are not verified

Parameter and hardware changes are rarely measured against a fair baseline.

Control-group verdict for every change request

CHALLENGE

Capacity planned without demand

New sites and expansions are decided without linking radio data to users.

Forecast, sale locks and nominal points on one map

CHALLENGE

Transport faults look like radio faults

One backhaul problem degrades many sites at the same time.

Backhaul verdict for every site, on every page

CHALLENGE

Hard-coded KPI definitions

Tools break when the vendor or the KPI catalogue changes.

The operator's own catalogue, bound by KPI role

One workspace for the whole radio network

Iris reads the counters, configuration, transport and subscriber data the operator already owns. It shows what is unusual, explains why with evidence, and follows every fix to a verified result.

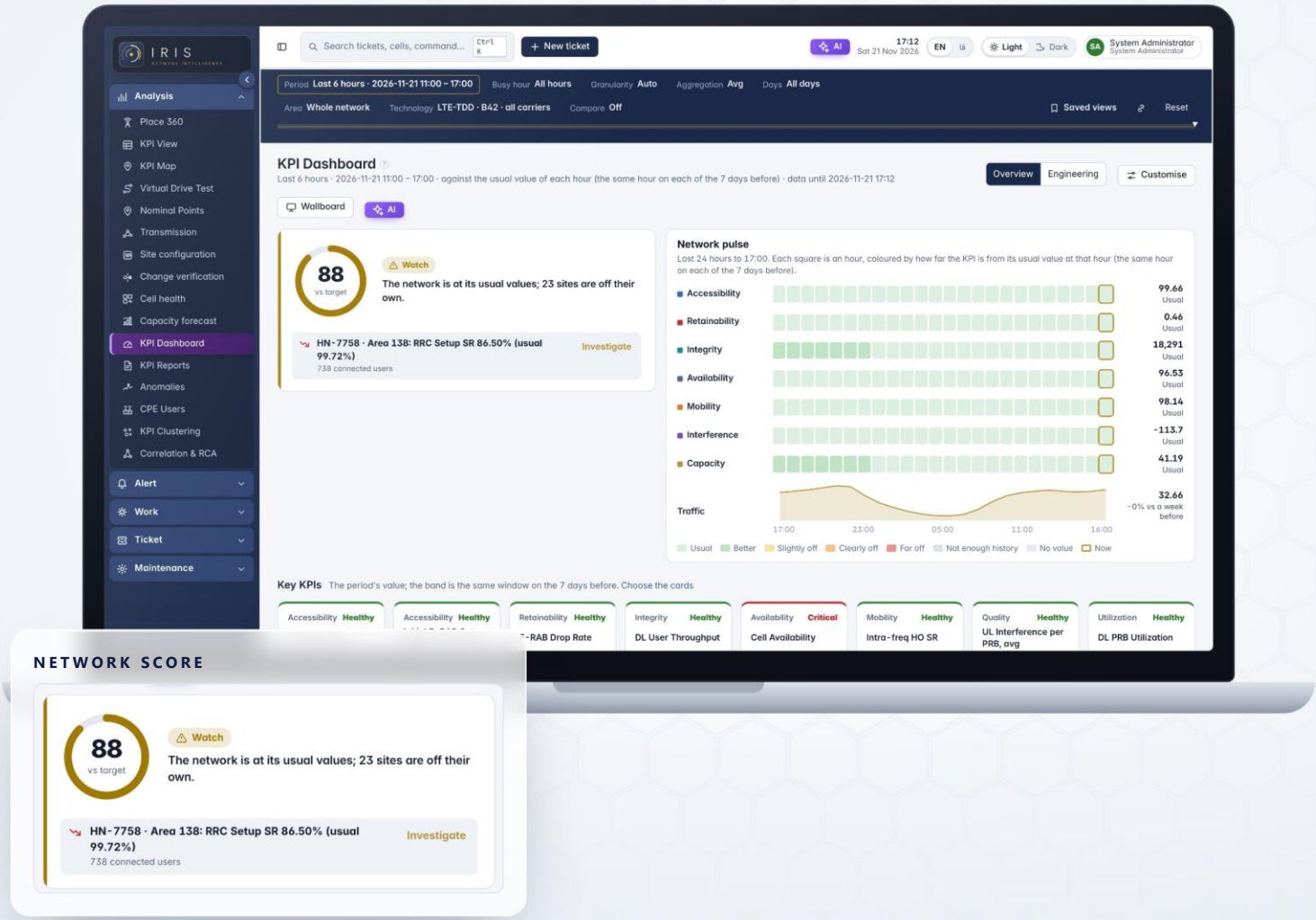
16
analysis applications on one platform

15 min
detail for every cell, kept for years as hourly and daily data

100%
read-only access to the network and its sources

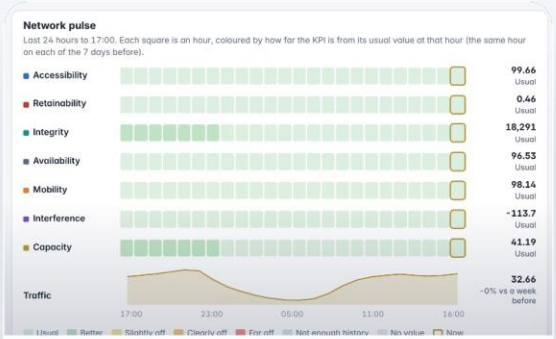
0
internet or cloud dependencies, fully on-premises

PRODUCTION-READY · 4G LTE · 5G NR · FWA



Four pillars, one chain of evidence

Each pillar hands its result to the next: what is seen is assured, what is assured is explained, and every change is proved.



01

Observe

One consistent view from the network down to a cell, every 15 minutes.

- KPI View and drill-down
- KPI Map with geo-analytics
- Dashboards and scheduled reports

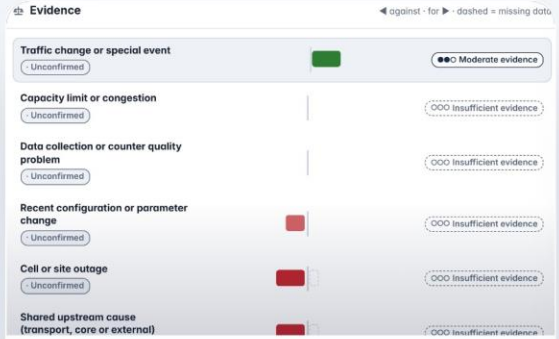


02

Assure

Detect what is unusual for this cell at this hour, and show only what matters.

- Ensemble anomaly detection
- Sleeping and silent cells
- KPI and transport alarms

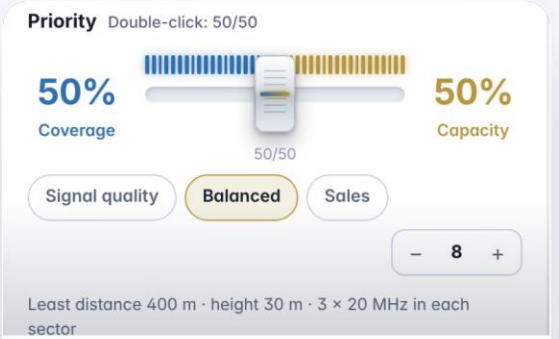


03

Diagnose

Find the cause with weighed evidence from counters, configuration and transport.

- Evidence-based RCA cases
- Configuration time machine
- Correlation and dependencies



04

Optimise & Grow

Act on the network and on the business, and prove each result.

- Change verification with control group
- Virtual drive test and retune
- Capacity and nominal planning

Read-only by design, analytical at its core

OPERATOR SOURCES

- **PM counter database** — INFLUXDB 1.X / 2.X · 15-MIN ROP — READ
- **KPI catalogue** — MYSQL / MARIADB · FORMULAS — READ
- **Node configuration** — SSH · SHOW COMMANDS ONLY — READ
- **Transport monitoring** — ZABBIX API · WEBHOOK — READ
- **CPE radio data** — TR-064 · PER SUBSCRIBER — READ
- **BSS service locations** — OAUTH2 · NIGHTLY SNAPSHOT — READ
- **Engineering files** — CDD · TX LINKS · CR · CSV — READ

IRIS CORE

ON-PREMISES · SINGLE SERVICE · NO EXTERNAL DEPENDENCIES

Connectors & sync
Batched reads, direct mode and on-demand fill of missing periods

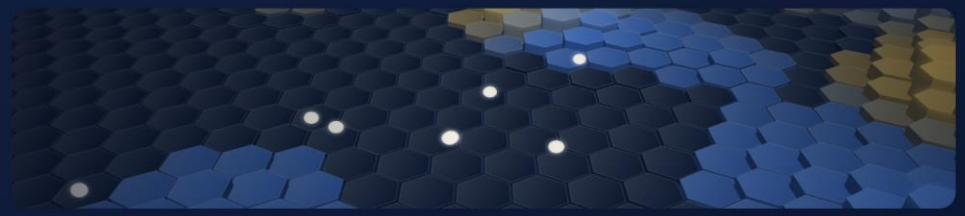
Tiered counter store
Quality flag on every reporting period
15 MIN · 7 D | HOUR · 90 D | DAY · YEARS

KPI query engine
The operator's own formulas, ratio of sums, busy hour, confidence intervals

Shared analytics library
Statistics, anomaly, RCA, clustering and radio models, identical in server and browser

Jobs & scheduler
Hourly and nightly detection, health checks and configuration collection

AI assistant
Answers from the platform's own data, with the page and evidence it used



ROLE-BASED ACCESS | AUDIT TRAIL | ENCRYPTED SECRETS | SAFE UPGRADE

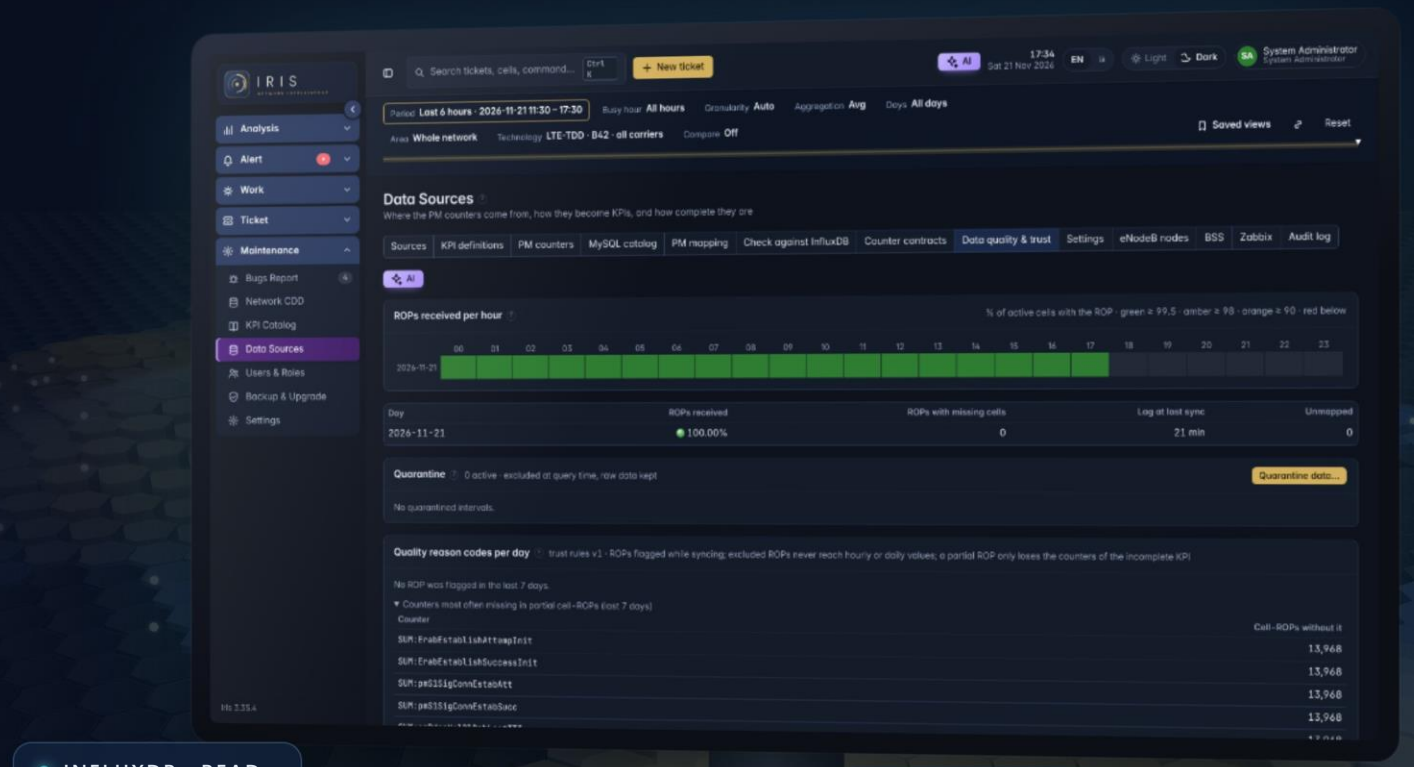
APPLICATION SUITES · WEB BROWSER

- **Observe** IRIS-OBS — KPI View, KPI Map, Dashboard, Reports
- **Assure** IRIS-ASR — Anomalies, Cell health, KPI Alarms
- **Diagnose** IRIS-DGN — RCA, Correlation, Configuration history
- **Optimise** IRIS-OPT — Change verification, Retune, Drive test
- **Plan** IRIS-PLN — Capacity, Sale locks, Nominal points
- **Transport** IRIS-TRN — Topology, live links, backhaul verdict
- **Subscriber** IRIS-SUB — CPE users, users on the map
- **Operate** IRIS-OPS — Tickets, Incidents, Changes, My Day

Connects to what you run. Changes nothing.

Iris reads the operator's existing sources with read-only credentials and keeps its own analytical copy. It never writes to the counter database, the KPI catalogue or a network element.

- **Live completeness on every source**
  Lag to the newest period, missing periods and unmapped objects, with alarms
- **Credentials encrypted at rest**
  Secrets are never shown again after they are saved
- **Years of history without load on the source**
  15-minute, hourly and daily tiers, filled on demand when older detail is needed



DESIGN PRINCIPLE

Introduce Iris beside existing processes, with zero operational risk.

Eight suites, one platform

All suites share the same data, the same KPI definitions and the same users and permissions. Each one answers a defined operational need.

SUITE	NAME	APPLICATIONS	PRIMARY USERS	OUTCOME FOR THE OPERATOR
IRIS-OBS	**Observe**	KPI View, drill-down, KPI Map, KPI Dashboard, KPI Reports, Place 360	RAN and KPI engineers, management	**One trusted number, from network to cell**
IRIS-ASR	**Assure**	Anomaly detection, Cell health, radio drift, KPI Alarms, alarms on the map	NOC, performance assurance	**Fewer alarms, ranked by real impact**
IRIS-DGN	**Diagnose**	Correlation & RCA workspace, configuration history, dependency graph	Optimisation and expert teams	**Causes proved with evidence, not guessed**
IRIS-OPT	**Optimise**	Change verification, site configuration audit, retune, Virtual Drive Test, signal at a point, KPI Clustering	Optimisation engineers	**Every change closed with a measured verdict**
IRIS-PLN	**Plan**	Capacity forecast, sale locks, Nominal Points	Radio and commercial planning	**Investment placed where demand is**
IRIS-TRN	**Transport**	Transmission topology, live microwave values, what-if cut, alternative paths, backhaul verdict	Transmission and NOC	**Transport faults separated from radio faults**
IRIS-SUB	**Subscriber**	CPE Users (FWA), users on the map, BSS service locations	FWA operations, customer care	**Each customer's radio experience, visible**
IRIS-OPS	**Operate**	Tickets, incidents, change requests, calendar, My Day, Inbox, AI assistant	All teams	**One workflow from detection to closure**

03

SECTION 03

Observe

One consistent view of performance, from the whole network down to one cell and one counter, at every 15-minute period.

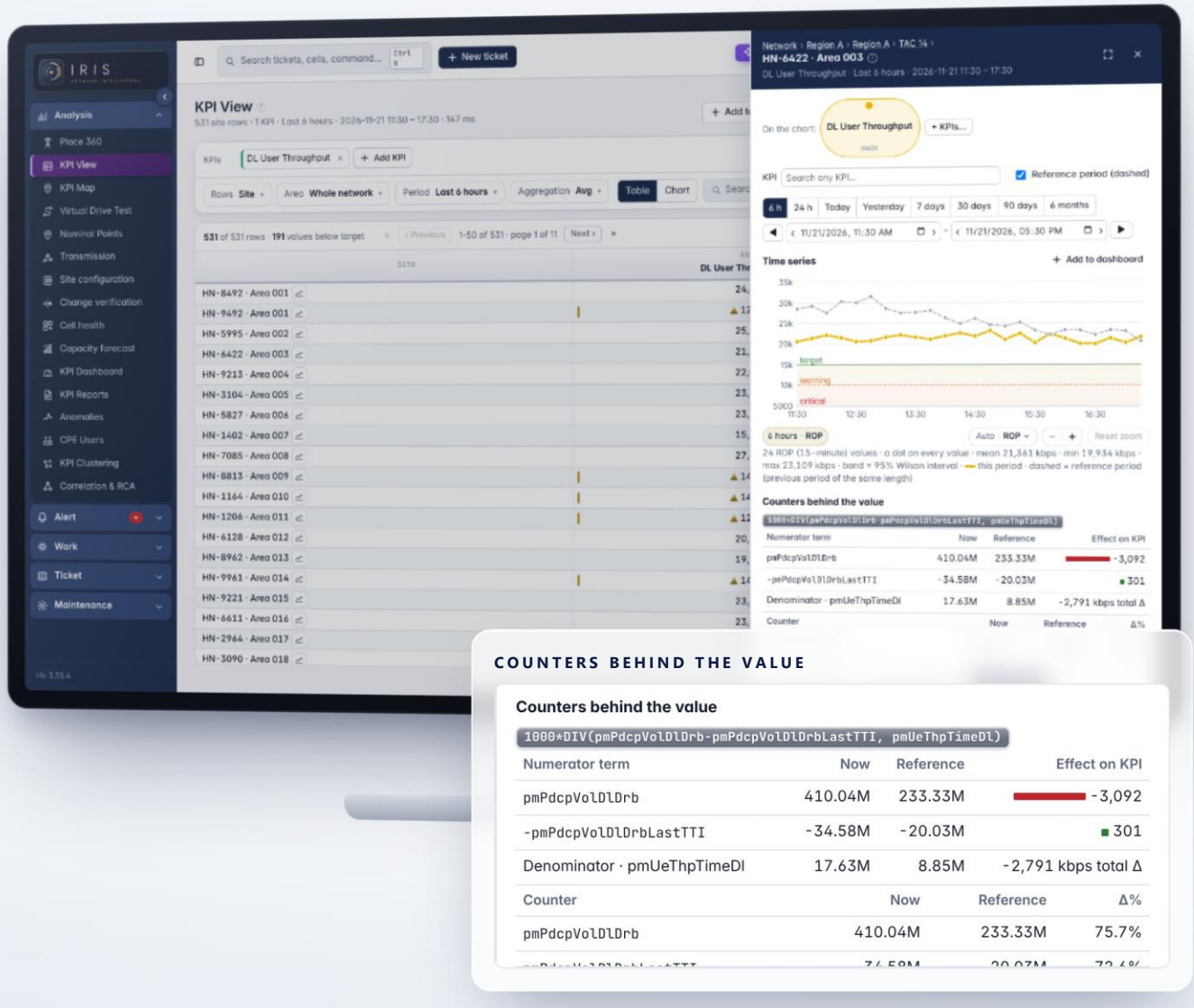
KPI View | Drill-down | KPI Map | KPI Dashboard | KPI Reports | Place 360



Every number, traced to its counters

KPI View shows any KPI for any area, period and level. One click on a value opens the drill-down: the time series, the reference period and the counters that make the number.

- **Correct aggregation at every level**
  Rates as ratio of sums; counting KPIs summed across cells, never averaged
- **Reference period and confidence band**
  The same window before, dashed, with a 95% interval
- **One level down**
  Each sector's share of the change, then the map, an RCA case or a ticket
- **Data quality on every value**
  Missing data shown as unknown, never as zero



COUNTERS BEHIND THE VALUE

Counters behind the value

`1000*DIV(pmPdcpVolDlDrb-pmPdcpVolDlDrbLastTTI, pmUeThpTimeDl)`

Numerator term	Now	Reference	Effect on KPI
pmPdcpVolDlDrb	410.04M	233.33M	-3,092
-pmPdcpVolDlDrbLastTTI	-34.58M	-20.03M	301
Denominator · pmUeThpTimeDl	17.63M	8.85M	-2,791 kbps total Δ

Counter	Now	Reference	Δ%
pmPdcpVolDlDrb	410.04M	233.33M	75.7%

THE OUTCOME

Engineers move from a network signal to the counter behind it in two clicks.

The network, on one living map

Every sector drawn at its azimuth and coloured by any KPI with the operator's own thresholds. The map works fully offline on the operator's premises.

- **Heat surfaces**
  Kriging, inverse distance or hexagon bins with exact ratio of sums
- **Time slider and A|B comparison**
  Replay any period, or compare two periods side by side
- **Layers on demand**
  Transmission links, CPE users, alarms, tickets and nominal points
- **Signal at any point**
  Estimated RSRP and SINR with the serving sector and confidence



03 · OBSERVE

From the NOC wall to the board report

KPI Dashboard turns any set of KPIs into a live wallboard. KPI Reports produces the operator's daily, weekly and monthly reports from the same numbers, with no manual export.

— Wallboard mode
Network pulse, health score and worst cells, refreshed every period

— Ready-made report templates
Daily health, weekly, monthly, cluster acceptance and before / after a change

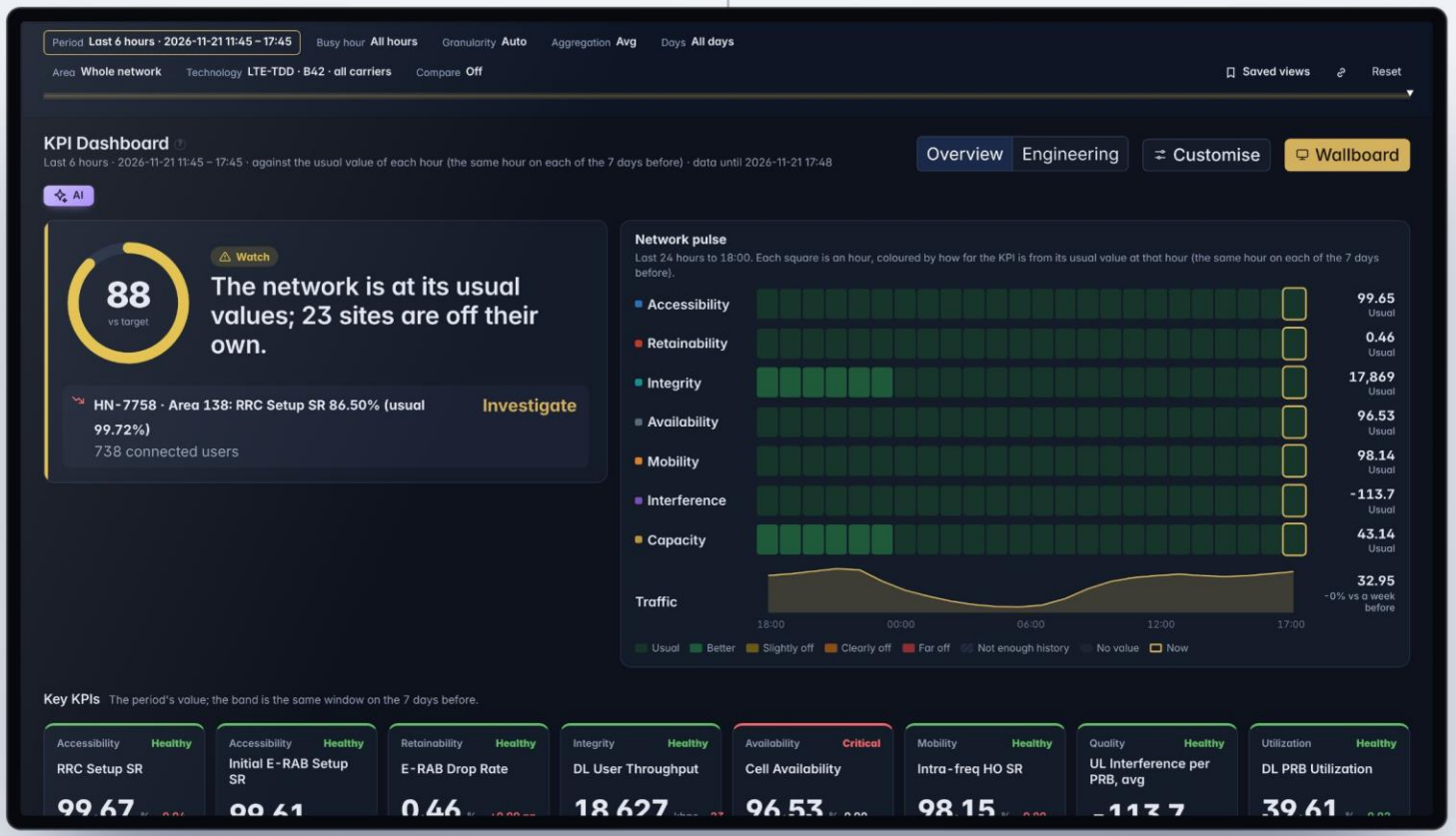
— Scheduled and shared
Reports sent by e-mail on schedule, exported to Excel, PDF or PowerPoint

— One source of truth
Dashboards and reports use the same KPI definitions as every other view

THE OUTCOME

Hours of weekly spreadsheet work replaced by reports that build themselves.

LIVE NOC WALLBOARD



READY-MADE REPORT TEMPLATES

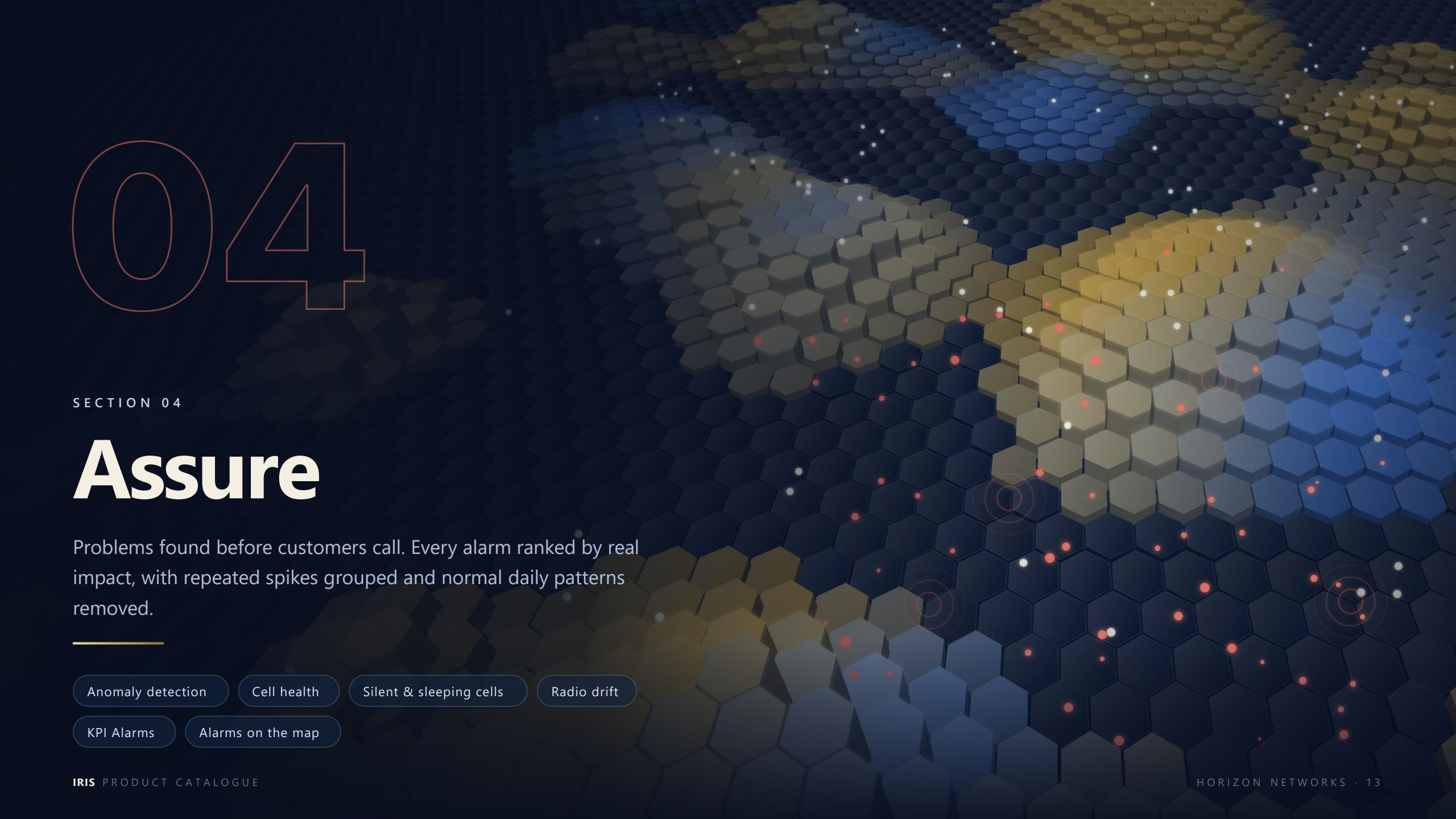
Daily Network Health
Yesterday, cell busy hour, whole network by city: summary, NHI, scorecard, worst 10 per domain, new alarms and anomalies, data quality.

Weekly KPI Report
Last week (Saturday to Friday), TCBH, week-on-week: daily trends, TAC table, chronic cells, ticket status.

Monthly KPI Report
Last calendar month against the previous month and the same month last year: trends, capacity, traffic growth and a 3-month Holt-Winters forecast.

Cluster Acceptance (SSV)
A set of sites over 7 days after on-air: acceptance criteria per KPI, pass / fail cell by cell, open issues.

Before / After CR
A change request: 7 days before and after (CR day excluded), Δ per KPI with a significance test, target and neighbour cells, Improved / Degraded / No change.



04

SECTION 04

Assure

Problems found before customers call. Every alarm ranked by real impact, with repeated spikes grouped and normal daily patterns removed.

- Anomaly detection
- Cell health
- Silent & sleeping cells
- Radio drift
- KPI Alarms
- Alarms on the map

Anomalies that matter, not alarms that shout

Iris learns each cell's normal weekly pattern and flags only what leaves it. Every anomaly shows the actual value against the expected one, the window and the cells affected.

- **Seasonality removed first**
  Busy hours and weekends no longer raise false alarms
- **Ensemble of algorithms**
  Seasonal residual, change detection and peer comparison must agree
- **Ranked by impact**
  Traffic and users lost decide the order, not the size of the spike
- **Grouped and learned**
  Repeated spikes merged into one event; engineer feedback tunes sensitivity

THE OUTCOME

A traffic drop to zero is caught in the next period, with its cause one click away.



No cell goes quiet unnoticed

Cell health checks every cell at every period. A cell that is on air but carries no traffic is not raised by the equipment. Iris finds it and proves it.

- **Sleeping and silent cells**
  Zero attempts at an hour that is normally busy, compared with the same kind of day
- **Evidence, not a guess**
  Availability, configuration print, energy saving and traffic checked together
- **Same-sector comparison**
  Neighbouring carriers on the same sector shown side by side
- **Radio drift**
  Slow degradation over weeks detected before it becomes an outage

THE OUTCOME

Outages that never raised an alarm are found in hours, not after customer complaints.



CELLS CHECKED
4,152
every 15-minute period

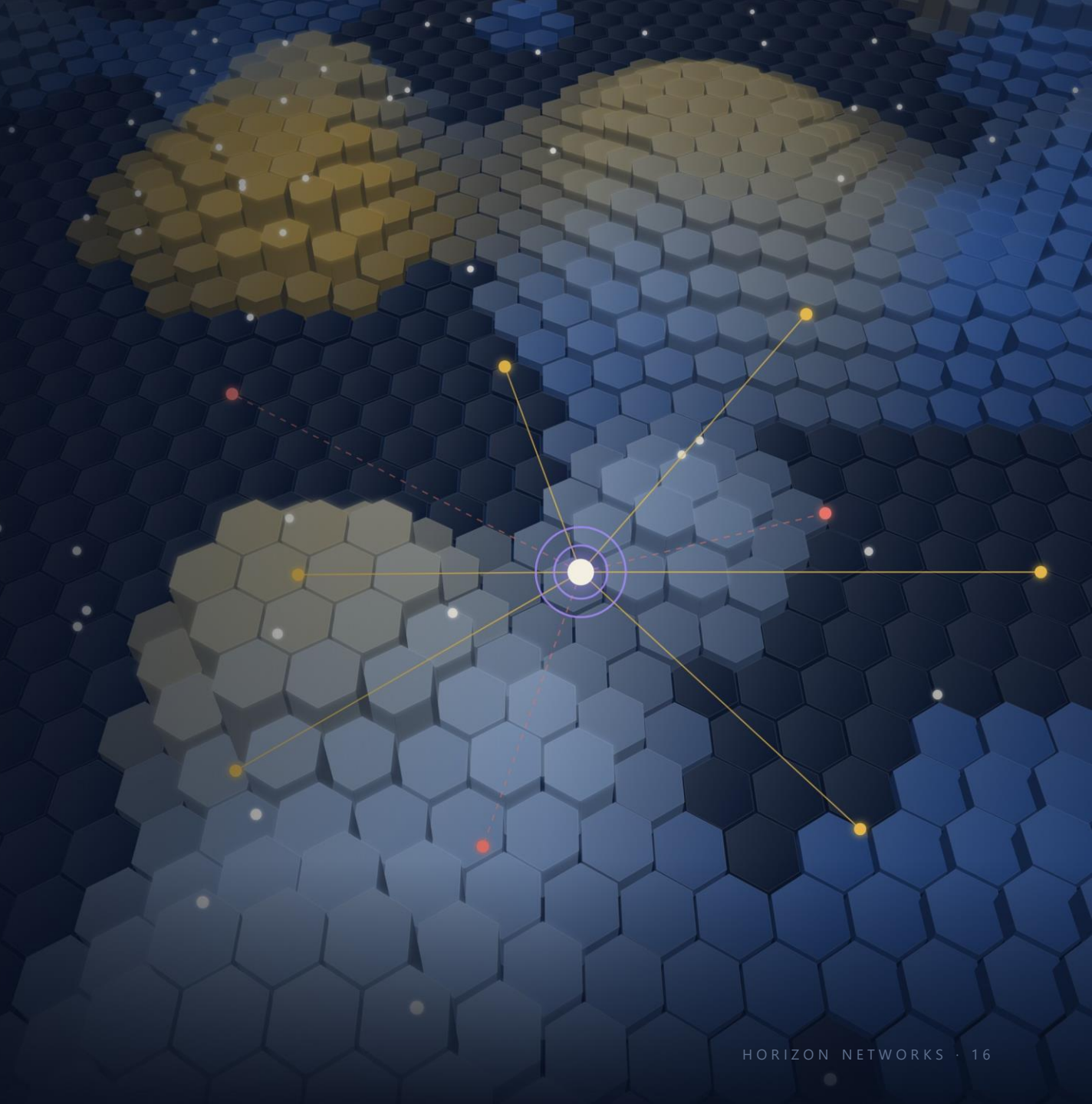
FOUND, NO ALARM
2
1 sleeping · 1 silent

05

SECTION 05

Diagnose

From a symptom to a proven cause. Every hypothesis is weighed against the evidence, and every decision is recorded.



- Correlation & RCA
- Evidence and hypotheses
- Is / Is not
- Configuration history
- Dependency graph

Causes proved with evidence

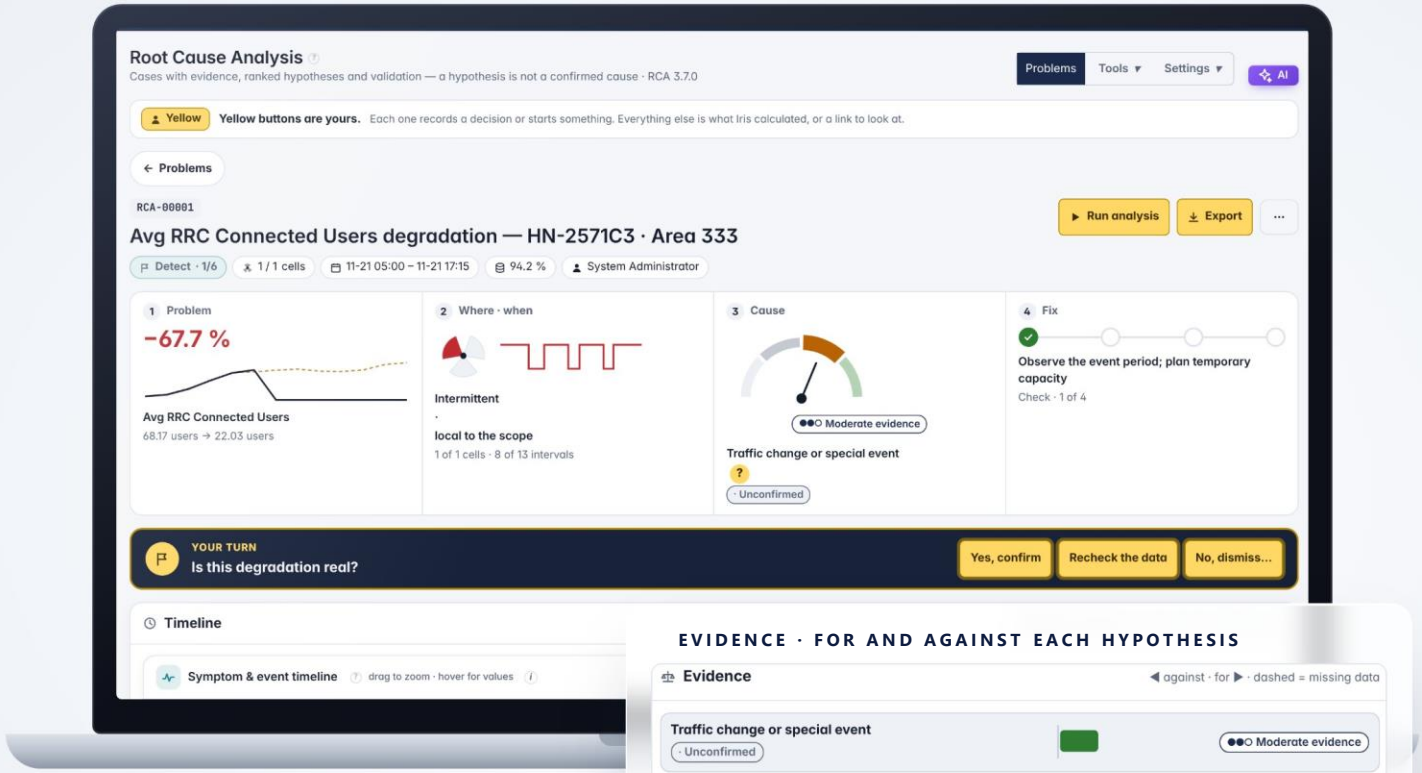
Each degradation opens a structured case. Iris ranks the possible causes, shows the evidence for and against each one, and leaves the final decision to the engineer.

1	2	3	4
Problem	**Where · when**	**Cause**	**Fix & prove**

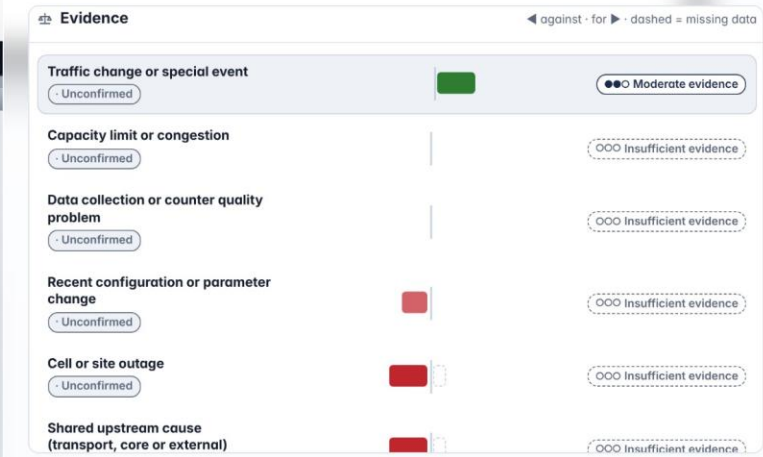
- **Ranked hypotheses**
  Traffic, capacity, configuration, outage, transport and data quality weighed together
- **Is / Is not**
  Which cells, periods and peers are affected, and which are not
- **Full audit trail**
  Every confirmation, rejection and fix is recorded with its owner

THE OUTCOME

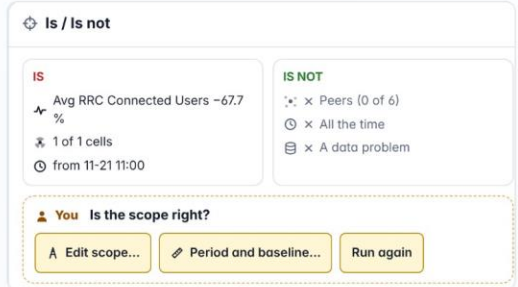
Root cause analysis that any engineer can repeat and any manager can audit.



EVIDENCE · FOR AND AGAINST EACH HYPOTHESIS



IS / IS NOT



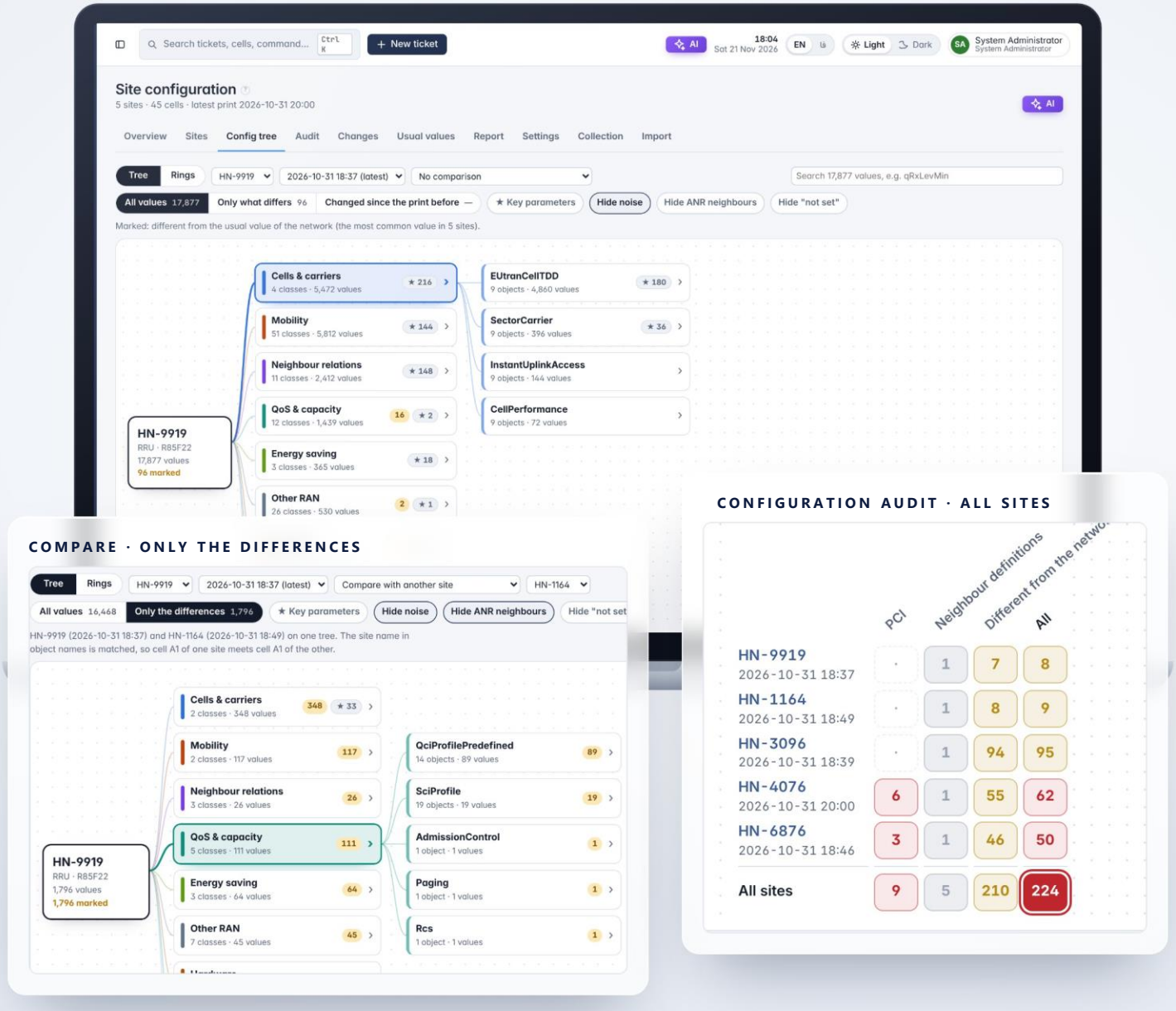
A time machine for site configuration

Iris keeps every configuration print of every site. Any two prints, or any two sites, can be compared parameter by parameter, and every value is checked against the network's usual value.

- **Configuration tree**
  Every class and value of a site, grouped by domain: cells, mobility, neighbours, QoS, energy saving, transport
- **Compare prints and sites**
  Only the differences shown, with key parameters marked
- **Automatic audit**
  PCI conflicts, neighbour definitions and values that differ from the network

THE OUTCOME

"What changed on this site?" answered in seconds, for any date.



06

SECTION 06

Optimise & Plan

Every change measured against a fair baseline, every drive simulated before a car leaves, and every investment placed where the demand is.

Change verification | Retune | Virtual Drive Test | Capacity forecast | Sale locks | Nominal Points | Transport



Every change closed with a measured verdict

Each change request, configuration print or CDD import is measured on the changed cells and their neighbours, against a control group of similar cells that did not change.

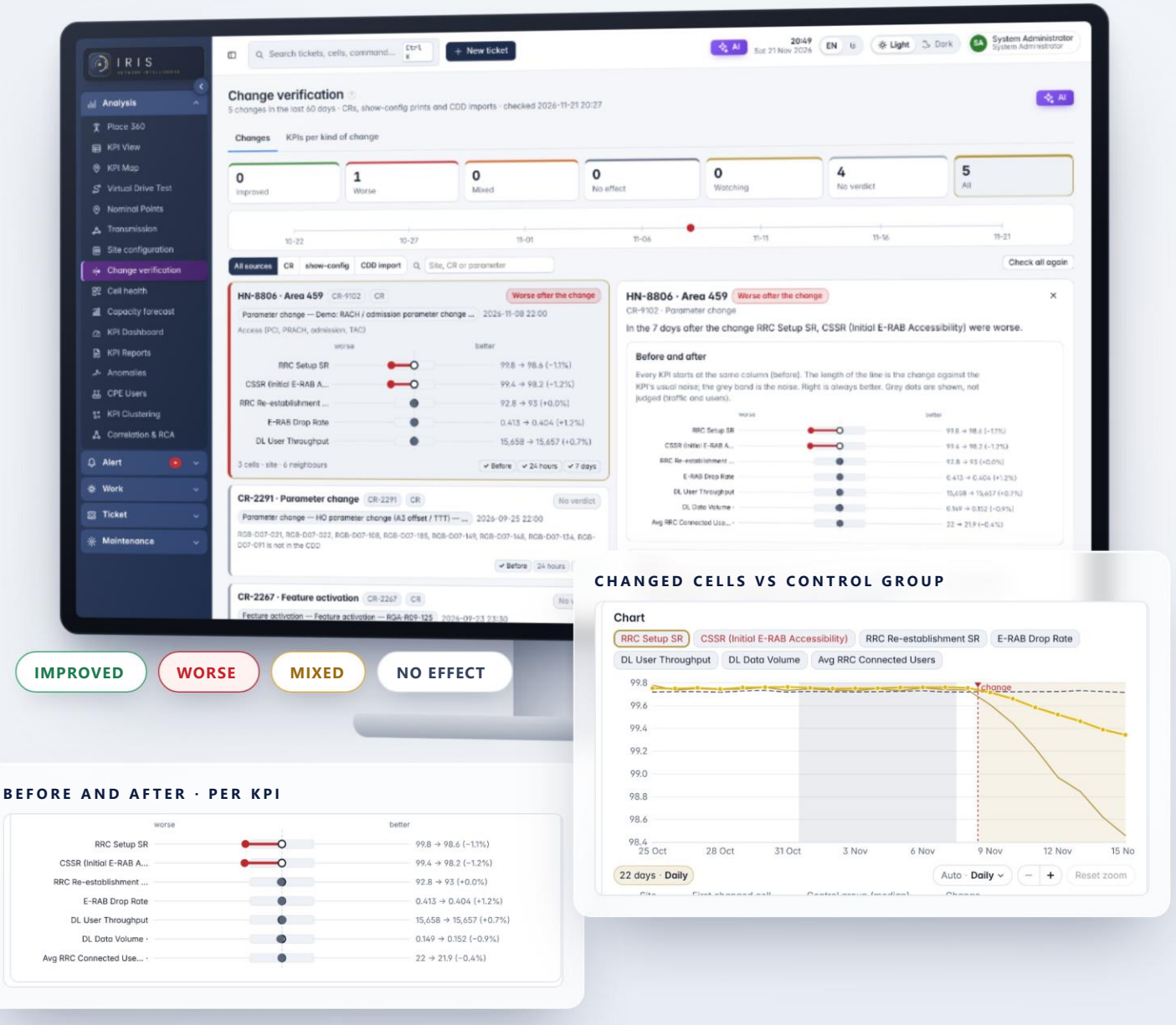
Fair baseline
Seven days before and after, change day excluded, with a significance test

Control group
Network-wide effects such as holidays and traffic events are cancelled out

Clear verdict
Improved, worse, mixed or no effect, at 24 hours and again at 7 days

THE OUTCOME

A degrading change is caught in one day and rolled back before it spreads.



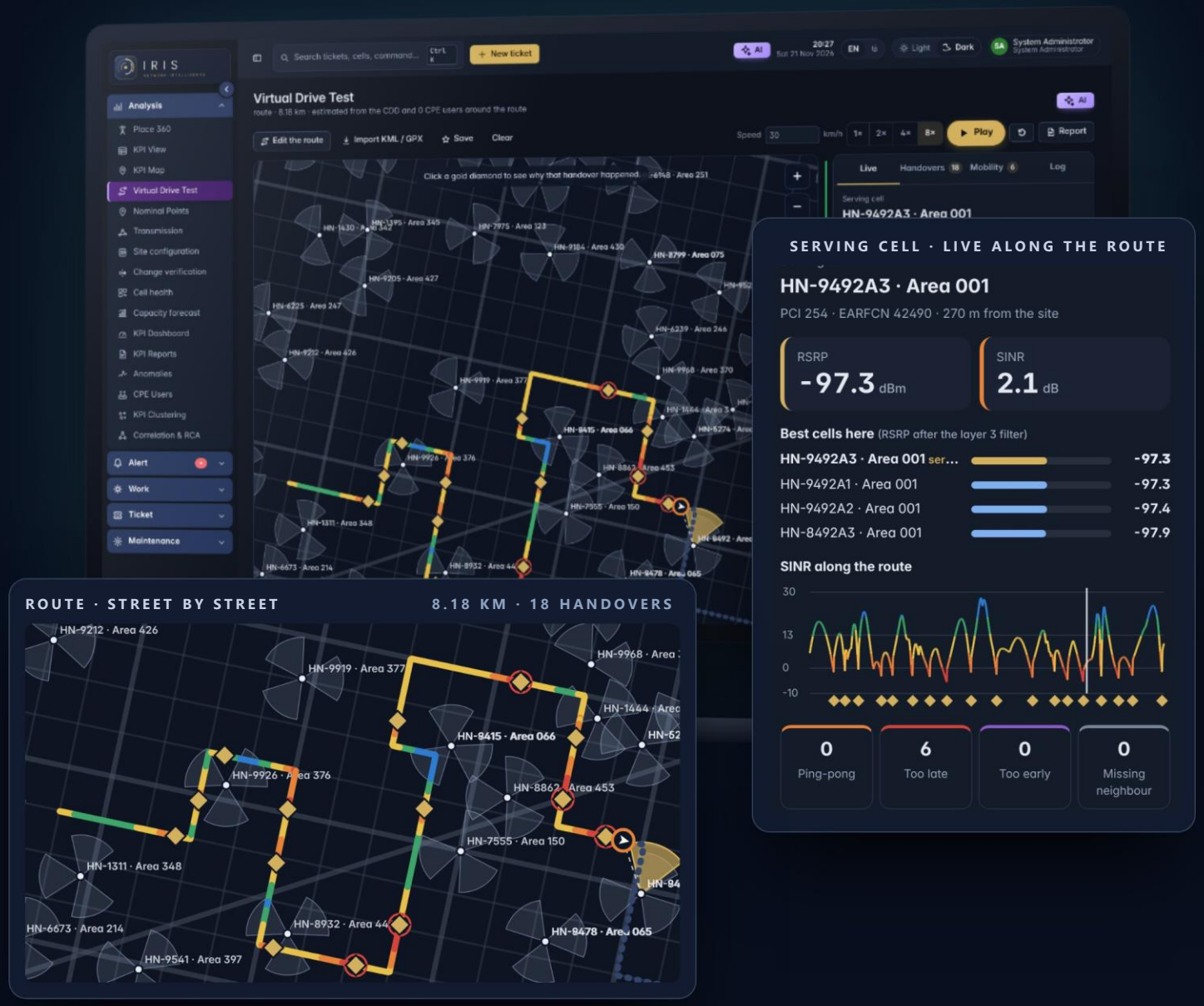
Drive the network without leaving the desk

Virtual Drive Test drives any route over the real site configuration and radio model. Every handover follows the operator's own handover parameters, and every one can be explained.

- **Route from the map or a file**
  Draw it, or import KML or GPX; RSRP, SINR and serving cell every 10 metres, street by street
- **Handover explained**
  Too late, too early, ping-pong and missing neighbours, each with its cause
- **Retune before the field visit**
  Try tilt, azimuth and handover offsets, and see the drive change
- **Report in one click**
  PDF, Excel, CSV and KML for the field team

THE OUTCOME

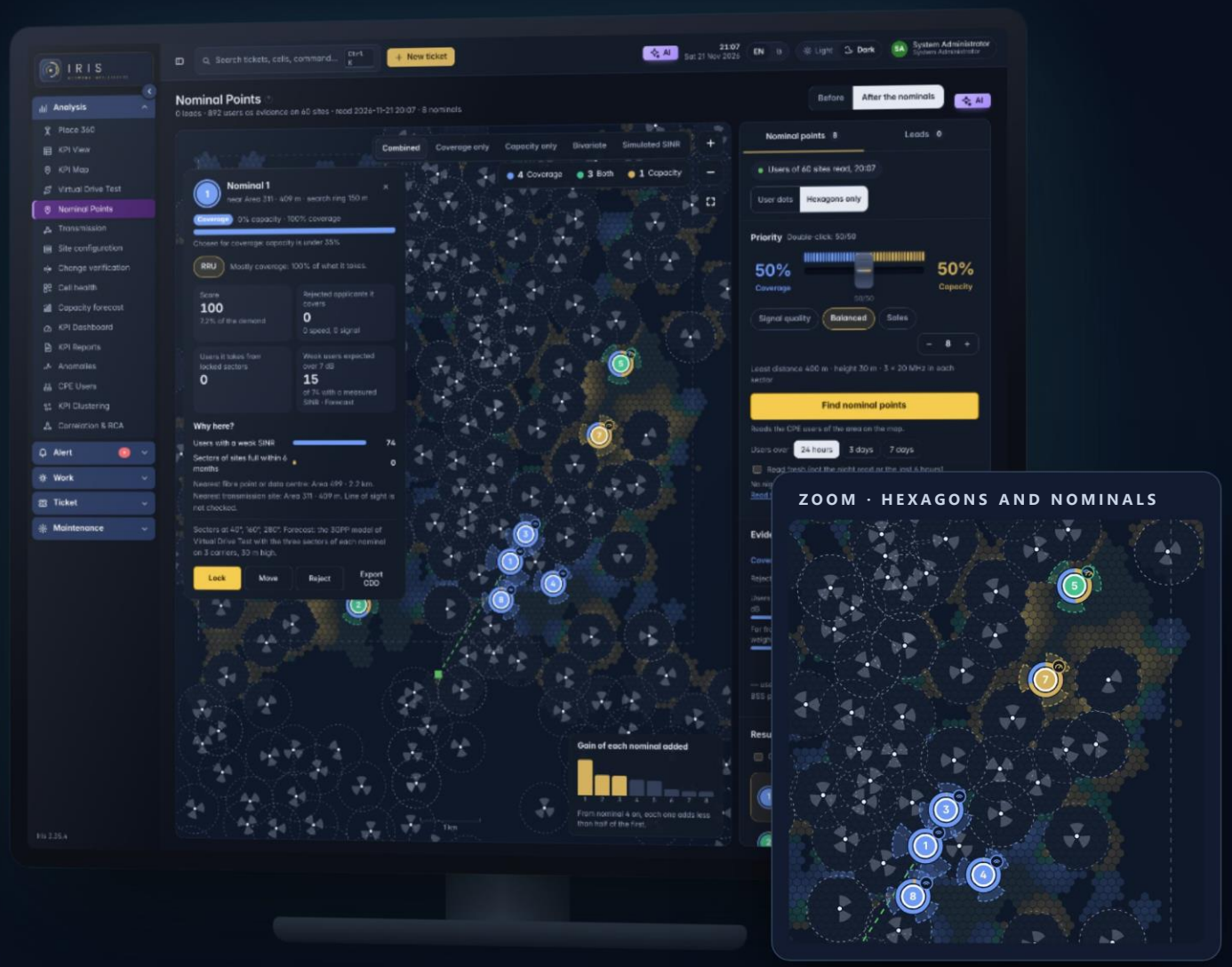
Fewer drive tests in the field, and every one of them aimed at a known problem.



Invest where the demand is

Capacity forecast shows when each site reaches its limit at the present trend. Nominal Points turns the real demand of CPE users into the best places for new sites, and explains each choice.

- **Capacity forecast**
  Every site, with the month it fills and the band of the forecast
- **Sale locks**
  Sectors that are full are locked for new sales until capacity is added
- **Nominal Points**
  Demand hexagons weighted for coverage or capacity, with the best candidate points
- **Before and after**
  The effect of each new site on the users around it, simulated first



THE OUTCOME

Every new site and carrier justified by measured demand.

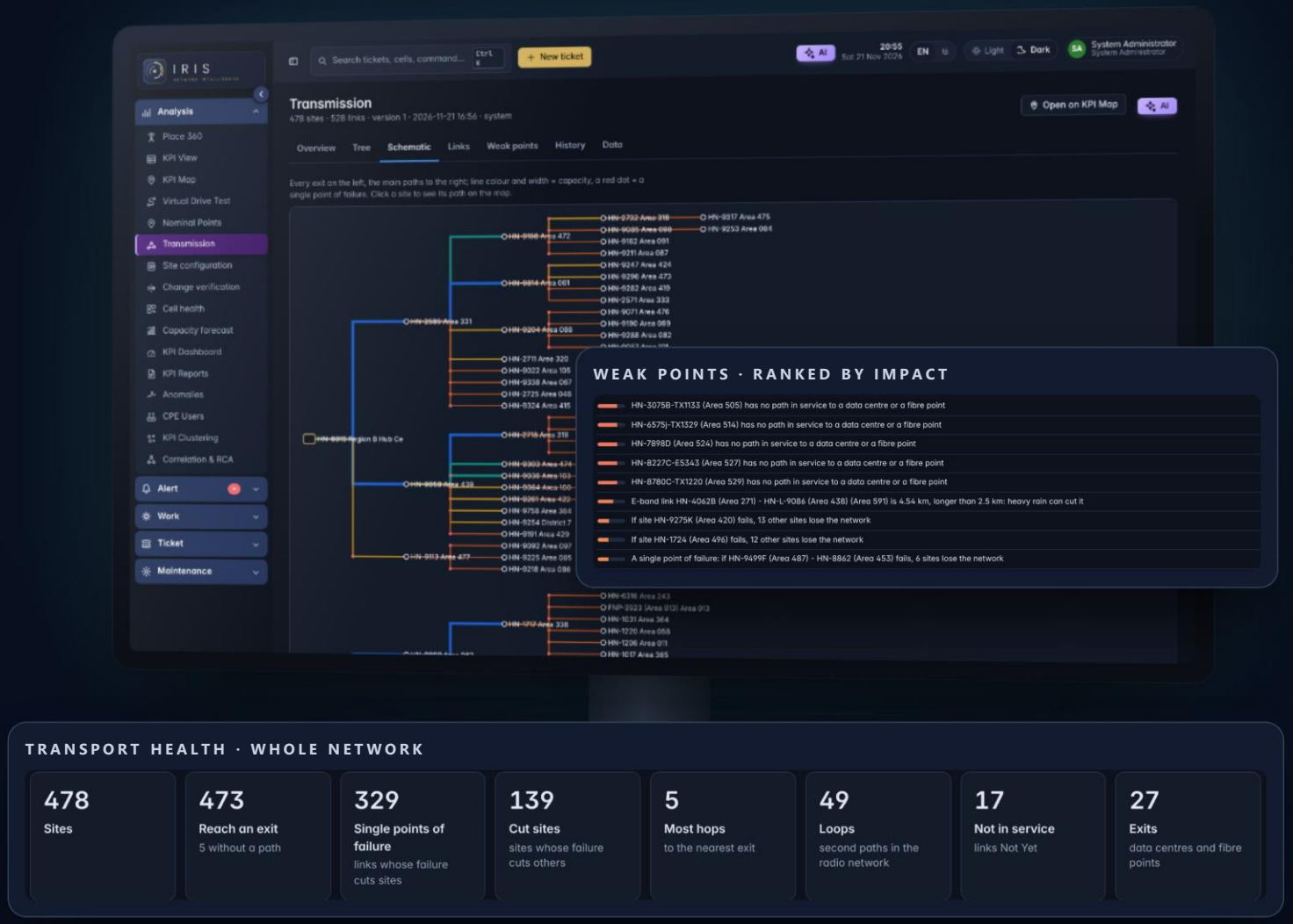
Transport faults, separated from radio faults

Iris builds the transmission topology from microwave and fibre data and follows every site to its exit. A degradation is checked against its backhaul before anyone blames the radio.

- **Topology and schematic**
  Every exit, every path and every hop, with link capacity
- **Single points of failure**
  Links and sites whose failure cuts others, ranked by impact
- **What-if cut**
  Remove a link and see which sites lose the network and which paths remain
- **Live microwave values**
  Rain risk, saturation and alarms on every link

THE OUTCOME

The NOC knows in minutes whether a problem is radio or transport.



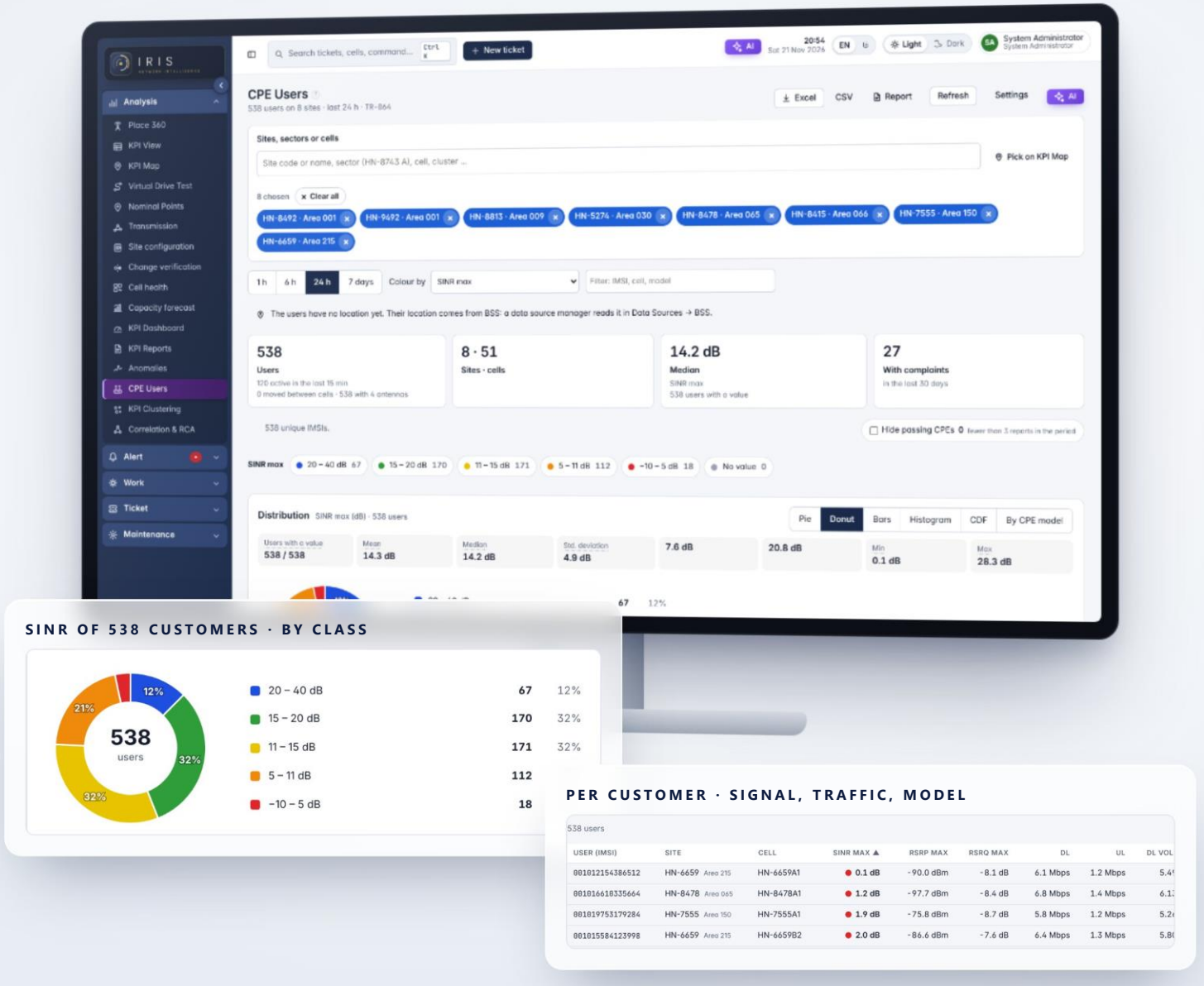
Every FWA customer's radio, visible

CPE Users reads the signal and traffic reported by each fixed wireless CPE. Engineers and customer care see the same picture of any customer, any sector or any site.

- **Signal of every CPE**
  SINR, RSRP and RSRQ per antenna, with the serving cell
- **Traffic and complaints together**
  Throughput and volume beside the customer's complaints
- **Distribution by sector and model**
  Find the sectors and CPE models that hold customers back
- **Users on the map**
  Each CPE at its service location from the BSS

THE OUTCOME

Customer complaints answered with data, in the first call.



07 · OPERATE

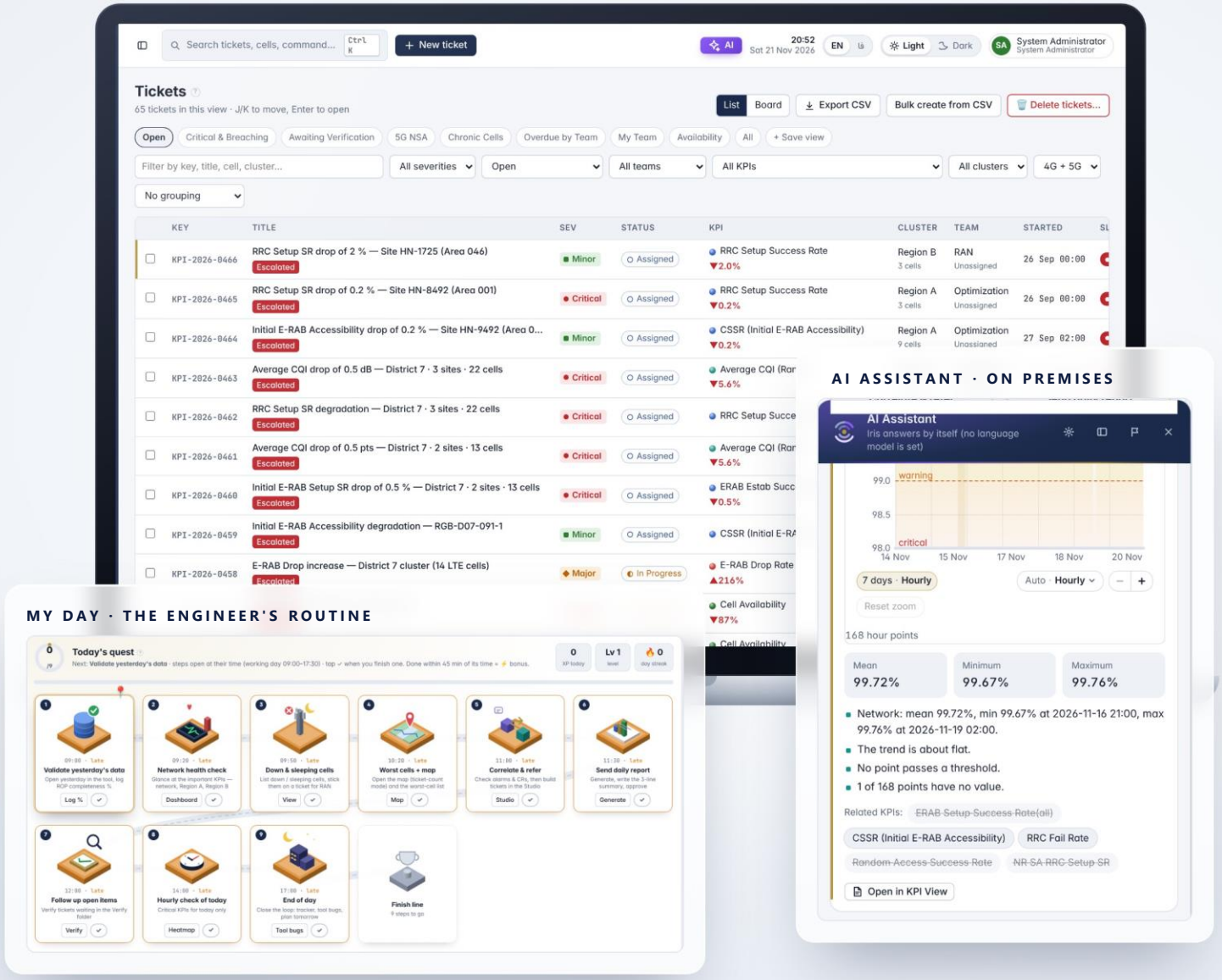
One workflow from detection to closure

Tickets are raised from anomalies, alarms and RCA cases with their evidence attached. My Day guides each engineer through the day, and the AI assistant answers questions on the operator's own data.

- **Tickets with evidence**
  KPI, cluster, severity and SLA on every ticket, escalated automatically
- **My Day**
  A daily routine of checks, from data validation to the daily report
- **AI assistant on premises**
  Charts and answers from Iris data; nothing is sent outside the network
- **Change requests and calendar**
  Planned work and events shown beside the KPIs

THE OUTCOME

Fewer tools, fewer hand-offs, and every ticket closed with proof.



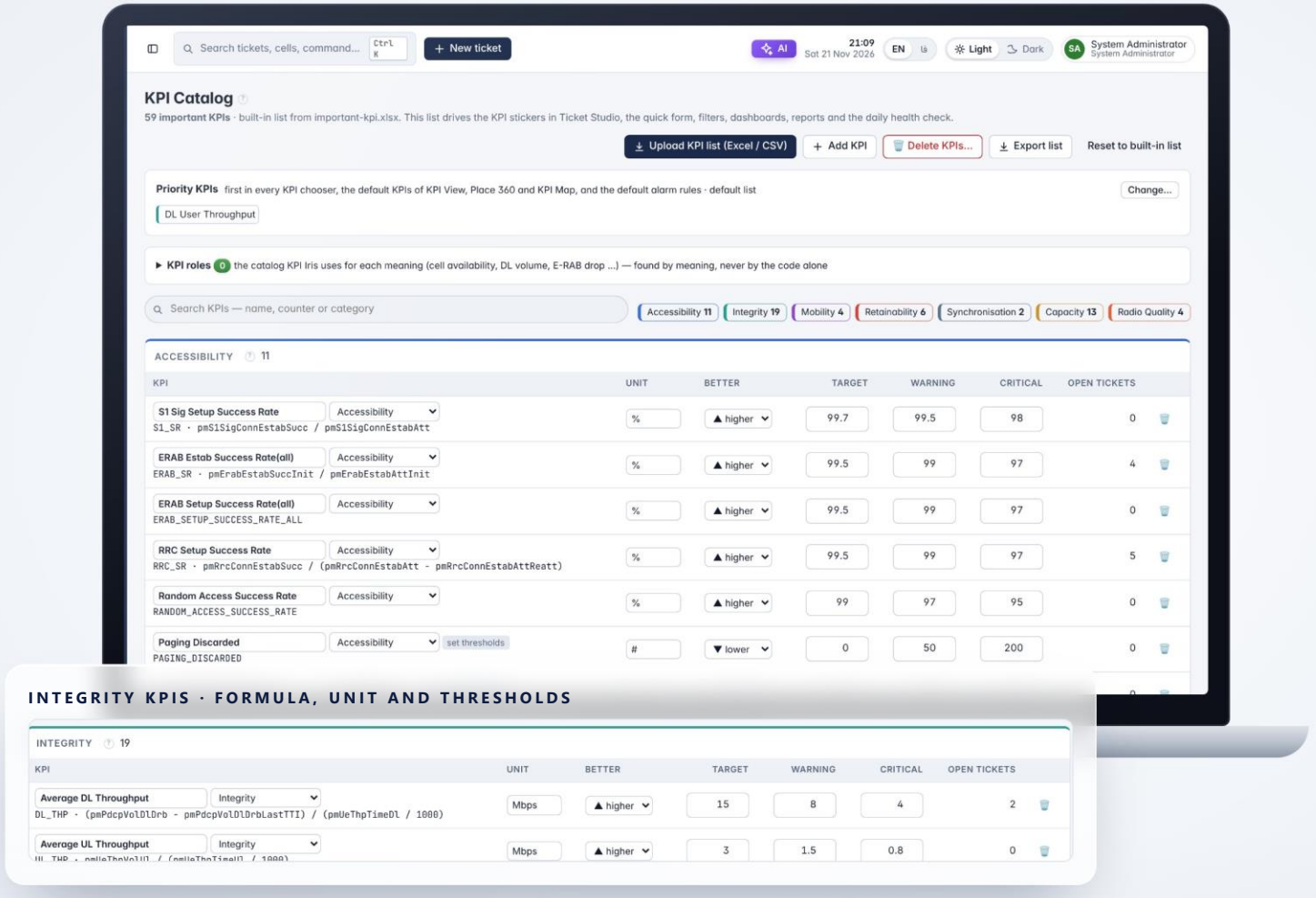
The operator's own KPIs, everywhere

Iris works with the operator's KPI definitions, not a fixed vendor list. Formulas, units, thresholds and priorities are set once in the KPI Catalog and used by every view, alarm, report and ticket.

- **Formulas from the counters**
  Each KPI defined from the operator's own PM counters
- **Thresholds per KPI**
  Target, warning and critical, with the better direction
- **KPIs found by meaning**
  Availability, traffic volume or drop rate recognised by role, never by a fixed code
- **Import and export**
  The whole list in Excel, uploaded or downloaded in one step

THE OUTCOME

One definition of every KPI, shared by every team and every report.



59 operator KPIs | Accessibility 11 | Integrity 19 | Mobility 4 | Retainability 6 | Synchronisation 2 | Capacity 13 | Radio quality 4

07 · SECURE

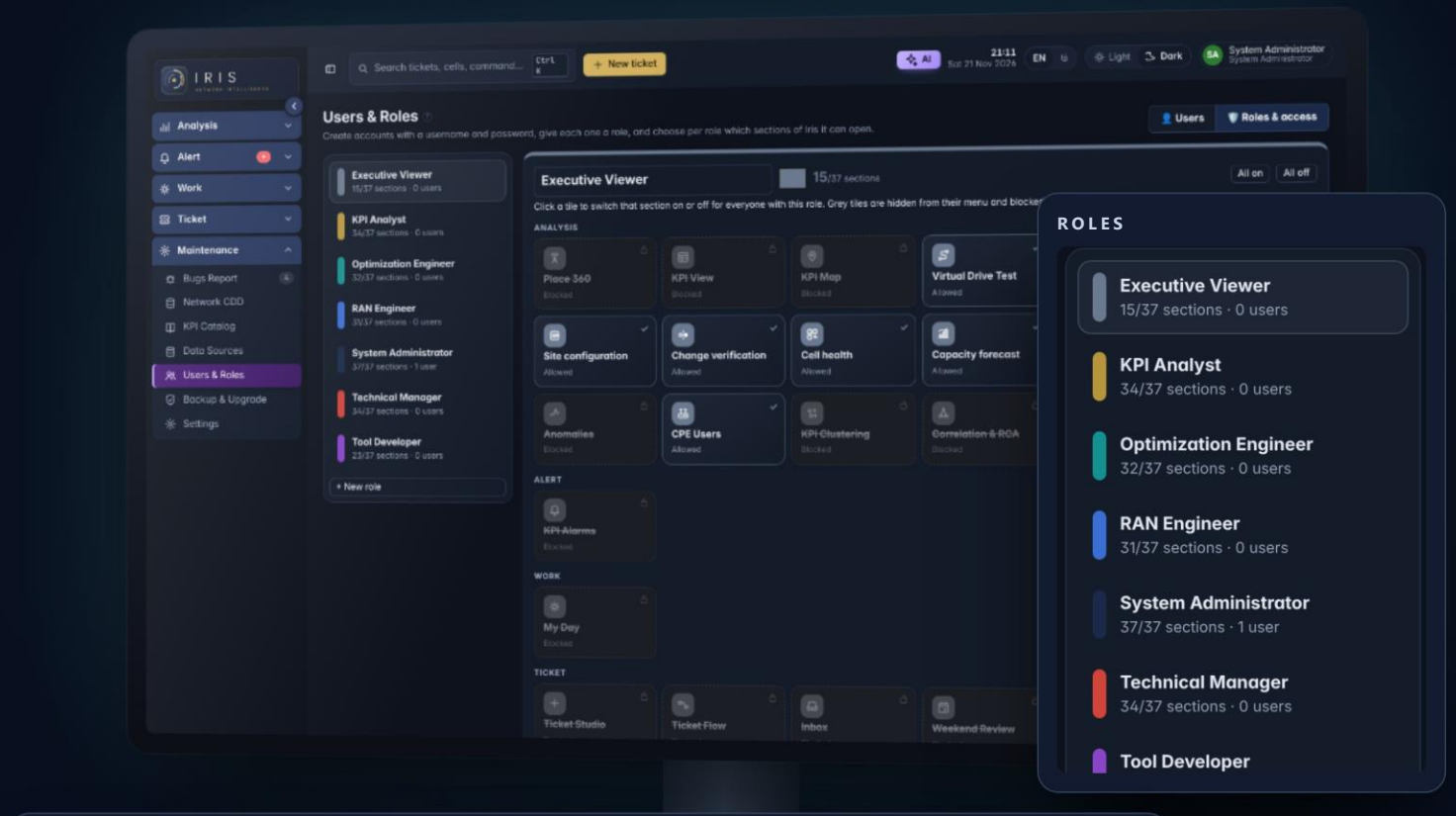
Built for the operator's own data centre

Iris runs fully on premises, inside the operator's network. It reads the network with read-only accounts and changes nothing. Every user sees only what their role allows.

- **On premises, offline capable**
  No cloud service and no internet access required; maps from local tiles
- **Read-only to the network**
  Counters, configuration and transport are read, never written
- **Roles and access per section**
  Each role opens only its own sections; every view is audited
- **Backup, restore and upgrade**
  One-file backup of tickets, KPIs, users and settings; in-place upgrade

THE OUTCOME

Operator data never leaves the operator's network.





ON PREMISES · READ-ONLY · ENCRYPTED SECRETS · SALTED PASSWORD HASHES · AUDIT TRAIL

Value for every team

The same data and the same KPI definitions serve every team, from the NOC wall to the management report. Each team gets the answer it needs, in the form it needs.

NOC & ASSURANCE

See it first

Anomalies ranked by impact, silent and sleeping cells, alarms on the map and live wallboards.

— **Problems found before customers call**

RAN & KPI ENGINEERING

Trust every number

KPI View, drill-down to counters, correct aggregation, data quality on every value.

— **From signal to counter in two clicks**

OPTIMISATION

Prove every change

Evidence-based RCA, configuration time machine, change verification and Virtual Drive Test.

— **Every change closed with a verdict**

PLANNING & COMMERCIAL

Invest with evidence

Capacity forecast, sale locks and Nominal Points from the real demand of customers.

— **New sites placed where demand is**

TRANSMISSION

Know the backhaul

Topology, single points of failure, what-if cuts and live microwave values.

— **Radio and transport faults separated**

MANAGEMENT

Decide on facts

Network score, automatic daily, weekly and monthly reports, SLA and team performance.

—**One trusted view of the network**

8	1	0	24/7
suites on one platform	set of KPI definitions for every team	writes to the network	detection, every 15-minute period

Technical specifications

PRODUCTION-READY · IRIS 3.35

Deployment	On premises, single server or virtual machine; offline profile for isolated networks
Technologies	4G LTE, 5G NR (NSA and SA), Fixed Wireless Access
Data sources (read-only)	PM counter database (InfluxDB), KPI catalogue (MySQL), alarms (Zabbix), CPE data (TR-064), configuration prints (SSH), network CDD, BSS
Time resolution	15-minute, hourly and daily tiers; years of history, filled on demand
Scale	Thousands of sites and tens of thousands of cells per server
Analytics	Seasonal decomposition, ensemble anomaly detection, change detection, peer comparison, control-group verification, clustering, 3GPP radio model
Users and security	Role-based access per section, salted password hashes, encrypted source credentials, full audit trail
Interfaces	Web client in English and Persian; export to Excel, CSV, PDF, PowerPoint and KML; REST API
Operations	One-file backup and restore, in-place upgrade, health and data-quality monitoring

IRIS

NETWORK INTELLIGENCE



Thank you

See the network. Prove the cause. Act with confidence.

Ask Horizon Networks for a demonstration on your own network data.

Production-ready | On-premises | Read-only to the network | 4G LTE · 5G NR · FWA