

Saving RAN Energy with VIAVI Location Intelligence

Proven Savings While Maintaining
Full Control Over Subscribers' QoE

Recent steep energy price increases and, ongoing OPEX and ESG pressures have made energy efficiency a top priority for mobile operators. Driving more power reduction in the RAN is crucial to make wireless networks more sustainable. Traditional RAN energy savings methods are not efficient enough to maximize the savings while not impacting network performance.

A subscriber-centric approach that combines information on subscriber location, RAN experience, and automation is way more effective at increasing power efficiency while retaining full control over quality of experience.

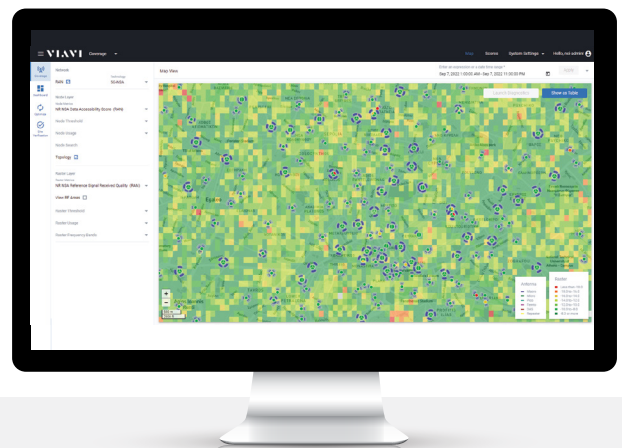
VIAVI Location Intelligence technology is a proven and easy-to-deploy solution to increase power efficiency and brings substantial additional savings.

Features

- Unique subscriber-centric optimization approach for 4G and 5G RAN
- Automated, simplified process to maximize RAN energy efficiency and control QoE
- Flexible optimization goals including data, voice, energy, availability, and capacity
- Predictive analytics – view KPIs before applying
- Automated before/after report

Unique Approach

- ✓ **Subscriber-centric solution** relying on call trace data and location intelligence
- ✓ **Automated algorithms deciding** best cells' configuration to maximize savings
- ✓ **Full control of QoE impacts** when optimizing for energy efficiency
- ✓ **Permanent cell/carrier switch-off** unleashing higher savings
- ✓ **Digital-twin technology** which predicts expected KPIs before changes are made
- ✓ **Optimization flexibility** with any KPIs combination goals



Business Benefits



Up to 20% of Savings:
Achieve ESG Goals



Protect Your
Subscribers' QoE



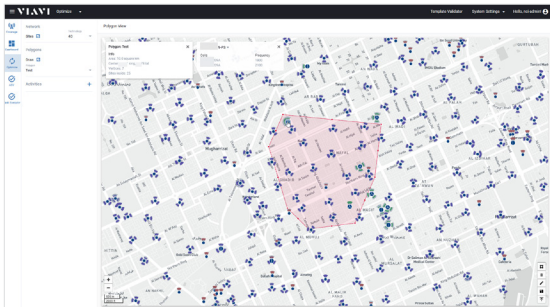
Reduce
OPEX



Automation to Deal
with Complexity

RAN Energy Savings Workflow

- 1 Define and Configure Optimization Clusters
- 2 Set Goals, KPIs, and Constraints
- 3 Run Automated Optimization on RAN Energy
- 4 Analyze Results and Predicted KPIs
- 5 Implement and Monitor



In Our Customers' Words

“VIAVI location intelligence enables us to harness key insights for a targeted, subscriber-centric approach to optimization, delivering the best possible customer experience, delivering maximum return with minimal investment.”



Mr. Abdulaziz AlBarrak,
General Manager of Optimization, Mobily

Why VIAVI?

Leverage decades of experience
in the RAN optimization space

Successfully adopted by 10+ Tier 1 mobile CSPs on 4 continents, from 2G to 5G

Proven energy savings for multi-technology / multi-vendor radio networks

Let's Connect to Discuss How We Can Work Together

viavisolutions.com/location-intelligence

Use Case: RAN Energy Savings – Tier 1 EMEA Operator

Customer Challenge

- Reduce RAN energy costs over complex 4G network
- Maintaining subscribers' QoE imperative
- Focus on important cluster (444 cells)

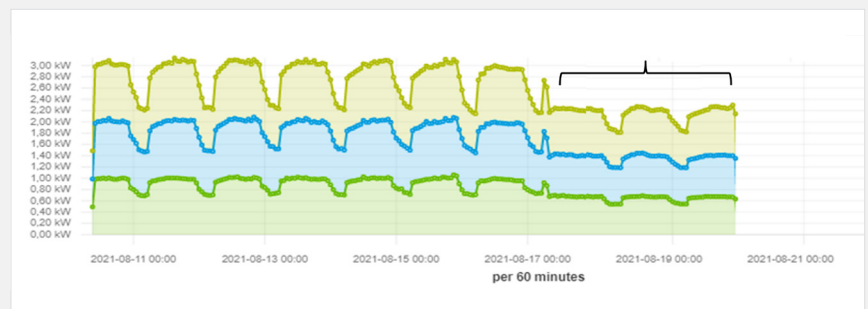
Solution

- VIAVI Automated Optimization analyzes ~2800 cells
- Goals: maintain coverage % <1% drops
- E-Tilt & power changes analyzed in increments; optimization ML forecasts all possibilities via 18 requested simulations
- Top 3 forecasts reviewed; the forecast with no impact to overall KPIs is implemented

Results

- 27 or 6.1% of cells powered off
- 20 up e-Tilts, Power lowered for 73 cells
- Total cluster power savings of **87.58 KWh**
- KPIs within targeted goal – Zero impact
- **~5% power savings resulting in 230k€ savings per year on cluster**

Significant RAN Power Consumption Reduction



Not Only Subscriber QoE Maintained, but Improved!

KPI	Pre-Optimization Average	Post-Optimization Average	Results
DL Throughput	12.315 Mbps	12.865 Mbps	4.52% Improved
Average CQI	8.9	9.5	Significant improvement in overall CQI distribution
VoLTE ERAB Drop rate	0.213 %	0.203 %	4.66% decrease in drop rate