



## OPTIMUM NETWORK VISIBILITY WITH AVIAT NETWORKS SERVICES & PROVISION

### MTN GHANA

#### CHALLENGE

MTN Ghana is the largest mobile communications provider in Ghana. With a constant flood of new service subscribers, network latency and expansion management are vital. Long-time users of Aviat Networks radios, MTN Ghana has used Eclipse since 2007 for its network backbone and 3.5G access management, benefiting from its modularity and liquid bandwidth with easy migration from TDM to Ethernet. Very rapid growth led to traffic disturbances in the network, with NOC and maintenance problems. MTN Ghana approached Aviat Networks Professional Services for a solution.

#### SOLUTION

To accommodate MTN Ghana's intense growth, The Aviat Networks Professional Services team designed backhaul path links and network rings using Eclipse microwave radios. They also deployed ProVision EMS, Aviat Networks' unique network management software. With ProVision, Aviat Services improved the network visibility in the capital of Accra, the largest, most challenging customer region, from 69 percent to 97 percent. And ProVision's user-friendly network management centralization reduced MTN Ghana's operational man-hours. Today, MTN Ghana benefits from reduced OPEX, consistently improved visibility, and fast ProVision-implemented upgrades throughout the network.



For 10 years, MTN Ghana has relied on Aviat Networks equipment. For its 3.5G access and backbone, the operator has used Eclipse microwave radios for backhaul path and ring networks designed by Aviat Networks Services.

Using ProVision EMS, Aviat Networks Services improved network visibility and management for MTN Ghana's largest, most challenging region, the capital, Accra. MTN Ghana also reduced its OPEX with man-hour savings due to ProVision's centralized network management.

### MOBILE COMMUNICATIONS LEADER WITH FAST GROWTH

The African nation of Ghana is one of the globe's fastest growing markets for mobile communications. Mobile Telephone Network (MTN) Ghana is the market leader in this challenging area, providing the full spectrum of consumer VoIP and innovative services such as wireless money transfers, video chat and more.

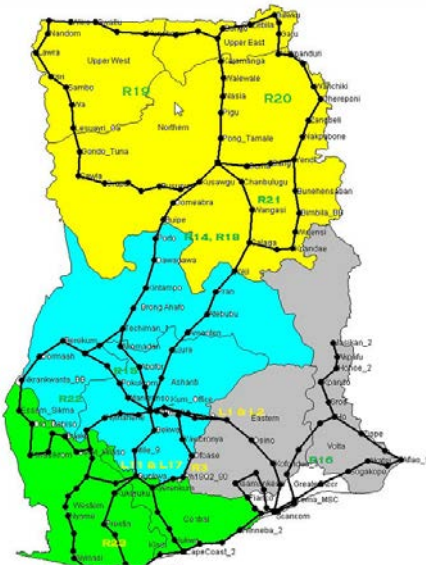
MTN Ghana is so successful that, in 2012, it exceeded its goal of 950,000 new subscribers by 50 percent, gaining 1.5 million customers for a total of 12 million subscribers, 47 percent of the market in Ghana. With these customers relying on both communication and mobile financial services from MTN Ghana, and a strongly competitive mobile market, any network outages have serious repercussions. Fiber networks are sometimes damaged by construction crews or illegal mining operations, or impacted by power outages. And network fluctuations lead to complaint calls from the government's Communication Minister. Meanwhile, MTN Ghana is always striving toward the longer-term goal of maximizing network capacity.

At one stage, a growth spurt led to traffic disturbances in the MTN Ghana network, creating network operations center (NOC) and maintenance problems. The company management then approached Aviat Networks Professional Services for a solution.



MTN Ghana is the leader in Ghana's demanding wireless telecommunications

### AVIAT NETWORKS' BACKBONE FOR MTN GHANA



MTN Ghana's backbone network of thousands of microwave radio links connects a nation.

Since 2007, MTN Ghana has deployed Aviat Networks' Eclipse radios for network backbones and 3.5G (UMTS) access. The operator prefers Eclipse for its modularity, user-friendly configurability and its Liquid Bandwidth, which makes it easy to migrate from TDM to Ethernet—a requirement when MTN Ghana was updating its backbone network.

The Eclipse backbone is deployed in SuperPDH and protected ring networks, with up to 4+4 XPD and space diversity protection in the rings. After an abrupt network expansion, these networks were experiencing traffic disturbances. MTN Ghana contacted Aviat Networks Services.

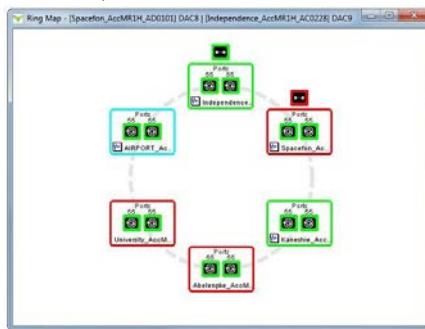
Supported by AviatCare, MTN Ghana receives the full range of Aviat Networks Services. Qualified, experienced engineers provide installation, technical support, field support and spares management. The Services team also provides network consulting for radio transmission, traffic connectivity and NMS mode visibility.

To accommodate MTN Ghana's capacity increase, Aviat Networks Services implemented a redesign of significant backhaul path links. They also deployed additional network rings to accommodate growth and streamline traffic.

### VISIBILITY FOR RELIABILITY WITH PROVISION EMS

Aviat Networks Services, being proactive, worked with MTN Ghana to avoid future network disturbances. They pinpointed that the Accra region of the network was causing particular stress, with limited regional network visibility of 69 percent. For uninterrupted network management, they deployed Aviat Networks' ProVision Element Management System (EMS). All software for Eclipse and ProVision was bench-tested in Aviat Networks' Ghana laboratory before deployment.

ProVision is Aviat Networks' comprehensive and feature-rich network management system. It is used by MTN Ghana to manage the national network, both Aviat and third-party devices. ProVision's displays and reports provide a complete overview of network health and performance. To view the Accra region in ProVision, Services used ProVision's fast deployment functions, including auto-deployment, which locates and identifies Eclipse and other network devices automatically, and network health reports.



An Eclipse network ring displayed in ProVision—problem links are highlighted in red for user-friendly management.

### AVIAT NETWORKS SERVICES

For nearly 50 years, Aviat Networks has planned and designed networks globally, building a reputation for unsurpassed excellence in delivering reliable solutions leveraging the latest network advances.

Aviat Networks' experienced engineers research, assemble and validate all the components for a comprehensive engineering plan. Their goal is reducing system downtime and unnecessary costs during project deployment.

The benefits of investing in Aviat Networks Services include:

- Lowered project cost with minimized design churn and solutions implemented correctly the first time
- Network design and planning with best practice System Engineering and Optimization
- Deployment supported with Project Management, Site Services and System Integration Services
- Network protection and maintenance with AviatCare support, including longer term network management or education of in-house staff

### BETTER NETWORK MANAGEMENT WITH FEWER MAN-HOURS

When Aviat Networks Services completed implementing ProVision and the network reconfigurations, the Accra region was 97 percent visible, with verified network connectivity of more than 99 percent. And with ProVision in place, MTN Ghana’s operators now provide a quick response to technical problems, verifying and resolving many technical issues on Eclipse radios from ProVision itself. The MTN Ghana team accesses ProVision remotely to troubleshoot sites, praising its fast response and detailed information, often drilling down to check equipment part numbers and serial numbers. Any hardware or software issues are quickly escalated to engineering for resolution. With its support for up to 6000 network elements per server, ProVision can grow with MTN Ghana’s network for seamless management.

MTN Ghana’s Team Lead for Wireless Support Services, Ian Otoo Acheampong, says of ProVision, “My experience with the ProVision network management tool has been tremendously wonderful—having visibility of the entire network at a single location. It makes troubleshooting so easy and quick, picking up issues for resolution from the remote site across the nation...now all engineers accessing the network do that with [ProVision] automatic user accounts. It has reduced the man-hours used by the NOC and the support team by locking and unlocking INUs for field team and other users of the network and has improved the availability and visibility of the wireless network.”

By concentrating more functions at MTN Ghana’s operational centers with ProVision, and with ProVision’s ease of use, MTN Ghana is successfully leveraging a greater return on the network for less OPEX. “ProVision has definitely reduced operational costs,” says Otoo Acheampong.

### MTN EXPANSION CONTINUES

After these network improvements, MTN Ghana retains comprehensive AviatCare support. Today, up to 90 percent of MTN Ghana’s microwave radios are Aviat



Networks Eclipse radios, coordinating many thousands of links.

In 2013, MTN Ghana is still investing heavily to continue network upgrades and expansions, including nearly a thousand or more wireless 3G base stations and solar power for isolated installations.

MTN Ghana states, “MTN is focused on providing excellent telecommunications services

across the African continent. We believe that through access to communication comes economic empowerment.”

Otoo Acheampong adds, “I believe the future with Aviat Networks will be a good one as telecommunication moves toward packet data transmission and LTE technology.”

### PROVISION NETWORK MANAGEMENT

ProVision is Aviat Networks’ standards-compliant Element Management System. Capable of managing all Aviat Networks products, ProVision is a mature, reliable and futureproof system for large and small networks. Features include:

- Management of all Aviat Networks products and approved third-party devices
- Advanced auto-discovery, circuit tracing and services provisioning
- Management for up to 6000 network elements per server and 50,000 circuits
- Support for 25 simultaneous client sessions
- Extensive fault management cues and statistics, including scoreboards and event browsers
- An advanced graphical user interface with clear, detailed views to user interface levels



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