

## **Tektronix Expands Capabilities of Industry's First Mobile WiMAX Protocol Test Solution**

**WiMAX Solution Now Available on Two Proven Tektronix Platforms, Offering Functional Test, Troubleshooting and Performance Analysis**

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Tektronix, Inc. , a leading worldwide provider of communications network management and diagnostics solutions, announced the availability of two dedicated Mobile WiMAX (802.16e-2005) test solutions: one for functional test and WiMAX infrastructure simulation based on expanded capabilities to the G35-WiMAX solution; and one for monitoring purposes based on the Tektronix Network and Service Analyzer (NSA) platform which adds troubleshooting and performance analysis capabilities to ensure the delivery of high quality and leading edge WiMAX solutions.

Introduced as the only one of its kind in October 2006, Tektronix' G35-WiMAX solution has since proven its value in equipment manufacturer labs by enabling accelerated time-to-market and reduced time and development costs through the monitoring and in-depth decoding of R1 and R6 interfaces. Tektronix completes the portfolio of functional test applications with the introduction of R1 and R3 simulation on the G35-WiMAX. High performance and complex monitoring requirements of stress tests, field trials and real network deployments are met by the Mobile WiMAX multi-interface call trace and statistics on the NSA software and the proven Tektronix K18 portable probe form factor.

Tektronix' customer Alcatel-Lucent is the first to use the G35-WiMAX solution in the development of its WiMAX (802.16e-2005) network infrastructure equipment. "We are confident in Tektronix' ability to enhance our WiMAX (802.16e-2005) network solutions as we continue to help operators prepare for growth," said Erwin Stegmaier, head of WiMAX development, Alcatel-Lucent.

"While mobile WiMAX technology is still at the beginning of its lifecycle, the demand for diagnostic tools is growing from both the manufacturer test labs where functional and interoperability tests are being performed and from network operators for their first field installations and support in pilot phase operations," said Arif Kareem, Vice President, Network Diagnostics, Tektronix. "As a leader in mobile protocol testing, we are addressing our customers' needs by giving them two very powerful platforms to support their Mobile WiMAX development and deployment efforts, while enabling such benefits as accelerated time-to-market and reduced development and integration costs. We believe first-to-market support of customers' new technologies and applications is our true differentiation."

### **G35-WiMAX: Expanded Functional Test Capabilities**

The G35-WiMAX solution currently provides protocol analysis tools, such as real-time decoding and advanced filtering of IEEE 802.16e R1 and vendor-proprietary R6 interfaces with both control and user plane monitoring and Bit Error Rate Test. The solution has been expanded to include R3 interface simulation, emulation and decoding capabilities. Adding the R3 interface enables end-to-end correlation of WiMAX ASN traffic -- from the R1 to R6 to R3 interfaces. This saves time because problem areas and root causes within a complete test network are quickly identified. R3 simulation, including Access Network Gateways (ASN-GW) simulation to the Connectivity Service Network (CSN), CSN simulation to ASN-GW and Mobile Subscriber Stations (MSS) simulation to CSN, saves costs associated with functional tests through early identification of problems. Emulation of the CSN makes field tests possible before network deployment is complete.

## WiMAX NSA: Platform for Troubleshooting & Performance Analysis

Expanding the Mobile WiMAX solution to Tektronix' established Network and Service Analyzer platform provides full visibility into lab and live network traffic through multi-interface traffic analysis tools, which isolate root causes of network and service problems. The WiMAX NSA supports end-to-end traffic analysis by correlating protocol traces on the R1 interface, multiple MSS and on the R6 and R3 interfaces. The multi-interface call trace for Mobile WiMAX saves time and effort in troubleshooting because calls of individual MSS are isolated. Full data capture is guaranteed under the most severe load conditions.

A key feature, Session Analyst, provides WiMAX control plane performance indicators to quickly identify network problems that can be studied with other tools, such as call trace. Intermittent or non-recurring problems can also be identified. Session Analyst includes 802.16e MAC (Media Access Control) protocol counters and R6/R3 interface counters that display events on a time scale.

### About Tektronix' WiMAX Portfolio

To keep pace with more complex WiMAX design cycles, along with its rapid deployment schedules, WiMAX testing needs to be optimized. To be successful in these challenging circumstances, Tektronix offers a variety of WiMAX test solutions, including the G35-WiMAX functional test, the WiMAX NSA for monitoring purposes and the RSA-IQWIMAX specialized analysis software for the RSA3408A real-time spectrum analyzer.

The G35-WiMAX solution provides protocol analysis tools, such as real-time decoding and advanced filtering of IEEE 802.16e R1 and vendor-proprietary R6 interfaces with both control and user plane monitoring and Bit Error Rate Test. This visibility allows for quick and cost effective diagnosis of all functions, such as network entry, radio resource management and mobility management. The solution also includes R3 interface simulation, emulation and decoding capabilities. The R3 interface enables end-to-end correlation of WiMAX ASN traffic -- from the R1 to R6 to R3 interfaces, saving time because problem areas and root causes within a complete test network are quickly identified.

The WiMAX NSA supports end-to-end traffic analysis by correlating protocol traces on the R1 interface, multiple MSS and on the R6 and R3 interfaces. The multi-interface call trace for Mobile WiMAX saves time and effort in troubleshooting because calls of individual MSS are isolated. Full data capture is guaranteed under the most severe load conditions by the K18, Tektronix' scalable platform. Starting from a stand-alone probe to a high number of links (multi-probe), the K18 meets the performance requirements for the most demanding technical needs. The WiMAX NSA's Session Analyst feature provides WiMAX control plane performance indicators to quickly identify network problems that can be studied with other tools, such as call trace.

RSA-IQWIMAX offers continuous signal analysis of WiMAX waveforms captured by the RSA3408A real-time spectrum analyzer, including EVM and spectral measurements. The system's ability to trigger, capture and analyze WiMAX bursts improves the designer's time-to-insight.

### About Tektronix

Tektronix is a leading supplier of test, measurement, and monitoring products, solutions and services for the communications, computer, and semiconductor industries -- as well as military/aerospace, consumer electronics, education and a broad range of other industries worldwide. With 60 years of experience, Tektronix enables its customers to design, build, deploy, and manage next-generation global communications networks, advanced and pervasive technologies. Headquartered in Beaverton, Oregon, Tektronix has operations in 19 countries worldwide. Tektronix' Web address is [www.tektronix.com](http://www.tektronix.com) .

Tektronix provides network operators and equipment manufacturers a comprehensive and unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks. These solutions support such architectures and applications as fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV. Learn more about Tektronix' communications test, measurement and network monitoring solutions by visiting [www.tek.com/communications](http://www.tek.com/communications).

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