

WHITE PAPER

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Managing the Last 100 Yards in WiMAX Broadband Networks

By Drew Tick, CEO Code Red Systems

(Jerusalem, Israel) According to Trendsmedia, by the end of the 2009, 63% of all fixed and mobile broadband access solutions will be based on WiMAX, translating into a market of over \$5 billion. With this growth potential in mind, many players are already rolling out WiMAX solutions in order to establish themselves as players in this important market.

Overview

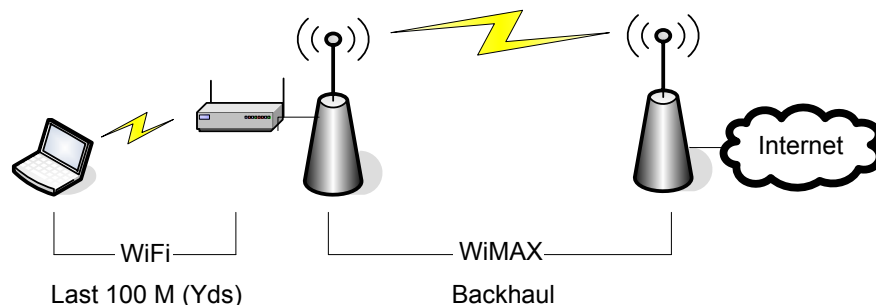
Although many standards and regulatory issues still need to be solved, companies are already rolling out a number of standard and non-standard WiMAX-like solutions. One of the greatest challenges in implementing these early systems is that WiMAX client devices have not yet reached an acceptable price point and hence do not have a substantial user base.

This has created a problem which has been termed “*The Last 100 Yards*” alternatively known in Europe as the “*The Last 100 Meters*”.

At the same time, WiFi has become so ubiquitous that almost all laptops have it as standard equipment, and additional WiFi devices such as PDAs, gaming consoles and telephones are emerging daily.

Therefore it makes sense that today most implementations of WiMAX consist of an 802.16 backhaul (i.e. from the CPE to the internet) and a handoff to a standard WiFi access point to complete the “*Last 100 Yards*” from the access point to the enduser’s laptop.

The following diagram illustrates this type of WiMAX installation:





Secure Wireless Management

The Management Problem

Now let us focus our attention on management of the WiFi “*Last 100 Yds*”.

In the world of WiFi there are over 100 equipment vendors making cards and access points for residential, business and public applications. Of these vendors, only the high end corporate vendors, such as Cisco, Nortel and Symbol had full centralized management solutions. Over 90% of the vendors, however, do not have a centralized management solution.

In most cases, WiMAX vendors already have business relationships with WiFi equipment manufacturers in Asia and usually specify an OEM WiFi access point which is included as part of their WiMAX solution. It is rare, if ever, that WiMAX vendors will choose an expensive high-end access point mainly due to commercial issues.

Since high-end access points have centralized management software and OEM access points do not have centralized management software, WiMAX vendors are faced with the challenge of how to provide a full management solution – including the WiFi based “*Last 100 Yds*”.

Most vendors agree that it is no longer sufficient to supply only the hardware and let the integrator worry about the rest. Today both customers and integrators expect the vendor to provide a complete manageable hardware and software solution.

While most vendors probably have software to manage the WiMAX backhaul, they do not have centralized management software to manage the WiFi “*Last 100 Yds*”.

The Management Solution

Code Red System’s AirMarshal® Wireless Management Software was designed to provide management for WiFi equipment from any vendor. This includes legacy, low-end residential, high end enterprise and future models from any vendor.

The software-only solution includes 24x7 monitoring of all wireless access points and associated client devices, a graphic representation of the entire wireless network, remote configuration, alerts and reports.

For WiMAX vendors and integrators, the AirMarshal software completes the full management solution which most importantly includes the “*Last 100 Yds*”. The AirMarshal software can be used to manage the WiMAX equipment as well, or solely for the WiFi segment of the network with integration into the vendor’s own WiMAX management software.

A leading WiMAX analyst also commented that a system like AirMarshal offers vendors a great deal of flexibility in selecting or changing the vendor of the WiFi hardware. Also of interest is the sophisticated system of escalating alerts and the ability to store usage data in order to analyze wireless traffic in order to arrive at profitable business models.



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Conclusion

WiMAX enjoys a large and growing market and the chance to become a truly disruptive technology. Due to its market potential, many vendors, including both well established vendors and start-ups, are introducing WiMAX solutions even with open standards and regulatory issues.

This has resulted in implementation of WiMAX and quasi-WiMAX networks consisting of an 802.16 backhaul and 802.11 (WiFi) front end, also known as the “*Last 100 M Yds*”. From a management perspective most vendors supply software to manage the WiMAX portion of the network, but few if any have the software which manages the “*Last 100 Yds*”.

The company’s AirMarshal Wireless Management Software Systems has already been implemented in both enterprise and operator environments. The software’s rich feature set along with the ability to support any WiFi equipment in a matter of days, has made it a leading candidate for management of the “*Last 100 Yds*” of WiMAX solutions.

Code Red is currently establishing partnerships with leading industry players which enable the leveraging of its technology into market driven solutions for implementation in both WiFi and WiMAX networks.

About Code Red Systems:

Code Red is a software developer specializing in management and security solution for the 802.11 wireless networks. The company is headquartered in Jerusalem, Israel, and has a staff of software engineers with hands-on military and civilian data management and security experience. The company has a number of products which cover a wide range of applications and support equipment from multiple vendors. For more information please visit the company web site at: <http://www.code-red.biz>