

Please Email [Sales@TeleAnalytics.com](mailto:Sales@TeleAnalytics.com) for a complete copy of the report's brochure.

# IEEE802.16a - WIMAX

Existing Realities and Emerging Visions in BWA and Mobile Computing

May 2004

A Realistic Outlook: 2004-2008

## SUMMARY

In the late nineties, major segments of Broadband Wireless Access (BWA) proved to be disaster areas comparable to no other. Operators and vendors together lost more than \$15 billions. BWA in the UNS (Unlicensed Spectrum) and in the 3.5 GHz band (wireless DSL) evaded the massacres of LMDS (Local Multipoint Distribution System), but were confined either in rural areas of the developed countries or the third world.

BWA became a four-letter word in the financial community and much of the equipment was "retargeted" from Access to Cellular Backhaul. By the end of 2002 beyond the LMDS and MMDS operators that have been almost totally wiped out or they were flirting with bankruptcy, scores of technology companies went under, pulled out of the domain, or they were living a slow death. In this environment the ratification in February 2003 of IEEE802.16a (BWA below 11GHz) and the solid support from Intel provided a glimpse of hope to BWA insiders and a good reason for hype to the many outside..

This report as all other from TeleAnalytics has no use for hype, of which unfortunately there is so much around that somebody may wonder if some undertook the rewriting of the laws of Physics. Instead the TeleAnalytics report looks only to facts and fundamentals. The road to even Fixed Wireless silicon and applications of WIMAX is going to be long and torturous, not to mention the mobility extensions. If nothing else, the self-imposed timeline in one years of operations is already one year behind schedule. On the positive side the recent joining of the forum by BT, FT, Reliance Infocomm and Qwest is something that BWA was always dreaming for: the support of major operators. Additionally the support gained from Alcatel and Siemens overshadows the Nokia withdrawal that after all was the delayed (by almost a year) recognition of realities.

While the earlier (2001) ratified IEEE802.16 standard for BWA in the 11-65GHz range did not save LMDS, the story does not have to be repeated. Interoperability in LMDS (vendors were then deaf to these kind of calls till close to the end) would have helped and it can be expected to help even more in the below 11GHZ bands. Therefore although some of the BWA myths that drove the industry to mass suicide are some times resurrected in the WIMAX framework, WIMAX can have a very serious positive effect to the Industry as a whole.

WIMAX will find a limited role even in the urban centers of the developed world, a place where BWA was soundly defeated. On the other hand this will happen neither in traditional general local access applications, nor in backhauling indoors Wi-Fi Hotspots as some choose to hope.

The below 11GHz BWA bands currently are hosts to a number of radically different technologies with applications areas ranging from underdeveloped countries only, to wireless backbones that represent optimal solution for outdoors applications everywhere. The report starts with a review of all streams of BWA (below or above 11GHz), zeroes in the band of interest below 11GHz and provides both a comprehensive business and technological analysis.

Having established this way the context, the structural issues of BWA in these bands are analyzed and the possible influence of WIMAX is detailed. Since a lot has already been made about the success of WIMAX as a linear extrapolation of the success of Wi-Fi, the differences and the commonalties in the two initiatives and the environments they have to operate in are examined through out the whole report.

On the quantitative side the analysis starts with historical data on volumes and characteristics in the various bands, since most companies in BWA have a history of 4-5 years in the field. The extensive forecasts are briefly described in the next page and the specific exhibits are shown in the Table of Figures.