

TECHNOLOGY BRIEF

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Special points of interest:

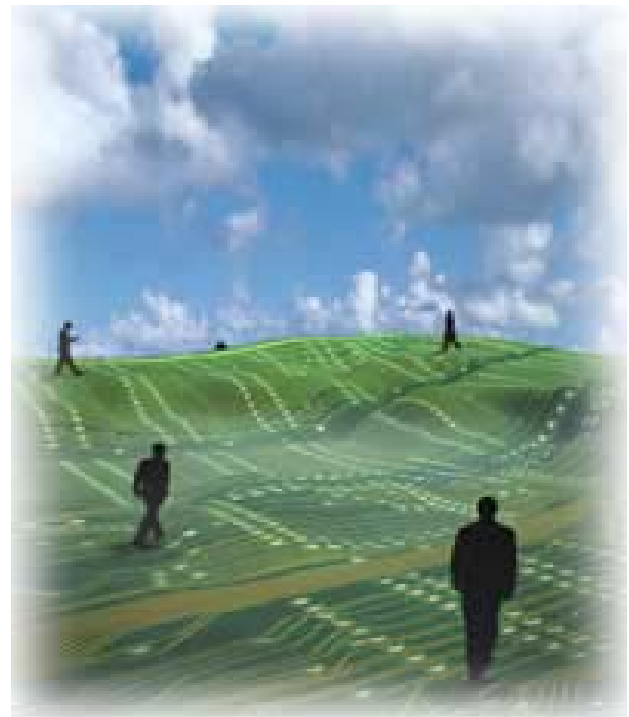
- Maxed out on WiMAX? Want to know more about WiMAX, but overwhelmed by the marketing hype? Follow our WiMAX Update Series for the latest news, discussions and analysis on developments in this field
- What's the best backhaul for the job? Trango? Red-Line? Canopy? RadWin? Tranzeo? Mikrotik? Orthogon? Want to know the "hidden secrets" that salespeople "conveniently forget" to tell you about? Read real-world user reviews at www.wispreviews.com
- Frustrated with trying to figure out what "over-the-air" throughput numbers really mean? Cut through vendor marketing & vague "feature speak" with CWLab's Throughput Certification Score.

THE "NEW" CWLAB VENDOR NEUTRAL TECHNOLOGY ARCHITECTS

CWLab has evolved into a vendor-neutral engineering organization that no longer sells hardware or implementation services. On September 15, 2004, Convergence Technologies Inc (CTI) officially assumed all of CWLab's former Product Sales, Integration, Implementation & Financing Operations. CWLab now ...

1. Creates standard definitions for specific performance parameters for products in the BWA industry.
2. Utilizes these definitions to provide a common means of evaluation and comparison of product performance within the industry
3. Performs and documents these tests for consumers so that they are able to objectively evaluate the performance of various product platforms available today.

Freed of "Vendor Obligations" –



CWLab now focuses on product testing, performance analysis and providing out sourced engineering support to hardware manufacturers, WISPs and other consumers and providers in the communications and networking indus-

try. CWLab's Technology Architects provide VENDOR NEUTRAL design and engineering services. CWLab offers affordable fixed rate plans starting at \$99 per month. The CWLab Tech-

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CWLAB THROUGHPUT CERTIFICATION SCORE

"What is the REAL THROUGHPUT of XYZ radio?" is definitely one of the most commonly (if not the number one) asked question by BWA infrastructure consumers today. Does this sound odd? What ever happened to the good old days when Fast Ethernet meant 100

Mb? Nowadays, there are "air rate" – "radio rates" – "line rates" – "port rates" – measurements done via big packets/small packets/various tcp window sizes/etc?!?! – every manufacturer has their own method of measuring throughput. Today's "marketing arms race" amongst wireless

manufacturers has created a "plug-and-pray" environment where a certain 54 Mb radio cannot sustain a 15 Mb FTP transfer, while another 36 Mb radio easily handles 20 Mb FTP transfers.

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CERTIFY "REAL" THROUGHPUT TEST #201

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Savvy consumers have learned "the hard way" that not all BWA vendors' solutions can deliver on claims. A recent blog illustrates these "frustrations..."

You know, companies using over-the-air rates to sell their products to WISPs are really starting to annoy me. Early on, I could see it, but we are professionals and need to know what products can really do. Now that 802.11a is out, everyone is saying they can do 54Mbps or 108Mbps!!!! When actually throughput is lucky to reach 20Mbps! Can you imagine buying anything else the same way?

"The new Porsche will do 600MPH!!!!" And in small print (Speed measured at flywheel. Your mileage may vary, but don't expect more than 55MPH.) Sort of like buying a car because of the highest number on the speedometer. Just because they put 300MPH on it doesn't mean you'll get anywhere close!

The only way we have to tell if one product is faster than another is for some poor WISP to shell out the money and report it's actual speed.

I don't mind products using the higher numbers for marketing purposes so long as actual, raw throughput numbers are listed on their data sheets. Even then they can be misleading when range is factored in and fallback to lower modulation rates.

Who knows. Maybe I'm just asking for too much!

Anonymous WISP, MD

The CWLab Throughput Certification is an independent rating scale of 1 to 10 that "verifies" for the consumer one of the most commonly asked question about radio products: "What is the REAL throughput of xyz radio platform?"

Scoring Details:

A scale of 1 to 10 that is scored on xyz product based on the percentage of accuracy in "real-world" ftp throughput tests developed by CWLab to create a common point for comparison.

The scale is in direct proportion to the % of accuracy of "Measured CWLab Throughput" vs. Marketed Vendor Data Rates.

A corollary score of "a" or "b" is assigned based on the "expected

stability" of xyz product's throughput.

The score is directly related to the % stability of the product platform in bidirectional traffic – if the product performs within 10% of what would be reasonably expected (defined as down only = 90-100% of expected down, up only = 90-100% of expected up, and bidirectional = 90-100% of bidirectional (in the case of a-TDD, we'd expect 50/50, in the case of f-TDD, we'd expect the preset ratio, e.g., 60:40, 50:50, etc), then it will receive an "a" rating. Otherwise, it will receive a "b" rating.

Examples:

A "marketed" 11 Mb solution, if scored at a "real throughput rate" of 5.5 Mb/s and is within the expected "stability variance" via the CWLab Throughput Verification Test, would receive a "score" of 5a.

A "marketed" 10 Mb solution, if scored at a "real throughput rate" of 3 Mb/s but is outside the expected "10% stability variance" via the CWLab Throughput Verification Test, would receive a "score" of 3b.

www.cwlab.com/certification/

"CWLab's new role in the Broadband Wireless Internet Access industry has been needed for some time. While large, well-funded service providers can afford the time, staff, and capital for extensive evaluations, small-to-medium service providers have, until now, been forced to rely largely on "tribal knowledge" of how well certain systems perform. Impartial evaluations are needed more than ever now; in 2005 and beyond, Broadband Wireless Internet Access technology and service providers are truly poised to offer competitive... and in many cases more cost-effective (and superior) levels of Internet Access."

Steve Stroh
Editor
FOCUS

NO REVIEW OF TRO...END OF CLECs? IS WIMAX THE ONLY ANSWER?

Denying a petition filed by CLECs, the Supreme Court this week did not elaborate on its decision not to review the decision made in March by the D.C. Circuit Court of Appeals. Petitioners requested that the Court reverse the March ruling, which vacated much of the FCC's rules on network unbundling that protected CLEC access. Following the Appellate Court decision, the Solicitor General opted against pursuing a stay

on behalf of the Commission. Because neither the FCC nor the Bush Administration supported the appeal, the decision not to hear the case was generally expected. AT&T commented that the decision leaves consumers vulnerable to the interests of only four telephone companies. The decision, however, was well-received by the Bell companies, who noted that the



proceeding has "dragged-on" for ten years.

www.cwlab.com/wimax/

HTTP://WWW.WISPREVIEWS.COM THE GOOD, THE BAD, THE UGLY...

Wispreviews.com has been created to provide information and communication on the subject of Last-Mile Broadband Wireless Access Infrastructure Equipment. Although the Internet listservs are a good place for researching such information, the 5000+ emails / day generated by these lists are simply too much for MS Outlook to handle. On top of that, relying on "tribal knowledge" is fairly risky, as 80% of relevant equipment-related responses seem to originate from salespeople with quotas to maintain. Not having the time, money or resources to spend months thoroughly testing

every piece of equipment, and not wanting to find out thousands (if not millions) of dollars later that "I picked the wrong infrastructure platform," we decided to stop "reinventing the wheel" by creating an online forum where users can post their real-world experiences. Hopefully, we will all contribute our individual experiences to create a collective forum



that benefits the industry as a whole.

www.wispreviews.com

BWA INDUSTRY CONSUMER WATCHDOG VENDOR NEUTRAL FEATURE CERTIFICATION

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nolog-E-Advisor program ensures that CWLab's customer's have access to high level engineering and support services; the most cost effective solution to build and maintain a reliable last-mile broadband technology platform.

In addition, CWLab, by launch-

ing the BWA industry's first consumer products review site at <http://www.wispreviews.com>, will create the "CWLab Certified" program to create the industry's first set of standard, vendor-neutral benchmarks. The first test consists of the "CWLab Throughput Certification Score" - an independent rating scale of 1 to 10 that will answer the commonly asked question of "What is the

REAL throughput of XYZ radio." CWLab will become the Industry's Consumer Watchdog by offering additional testing and certification programs and by creating add-on BWA Consumer Reports in order to certify manufacturer solutions.

www.cwlab.com/certification/

"OnlyInternet Broadband & Wireless, Inc recently removed a large outlay in labor expense by outsourcing those needed functions to CWLab. It seems like our CTO was usually just calling CWLab for advice anyways. We would rather focus our resources to deploy new infrastructure, interface with potential clients and leave the testing and engineering or our systems to a company focused on such operations."

Rick Harnish
President

MAXED OUT ON WiMAX? THE MAGIC PILL FOR INDEPENDENTS...

The number of ISPs and WISPs providing unlicensed wireless Internet services with a varying combination of 802.11 and proprietary RF equipment has grown dramatically in recent years. WiMAX™, which is the broadband wireless MAN standard based on IEEE 802.16 and ETSI HiperMAN, is widely viewed as "the great wireless hope" for outdoor wireless services. The volume of news coverage, newsgroup discussion

and exposure generated by the promise and potential impact of WiMAX is growing daily.

The million dollar question for today's independent operator is whether WiMAX will actually live up to all the hype. Will WiMAX really wash our dishes, cure cancer & potty-train toddlers?



WiMAX
FORUM

In the upcoming months, the CWLab Technology Brief will analyze and discuss the realities of WiMAX, examine the pros and cons of this upcoming technology, and examine steps Operators should take in today's "pre-WiMAX" world.

www.cwlab.com/wimax/



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Upcoming Industry Events

Before introducing the “new CWLab” - I would like to take a moment to personally thank everyone, customers & vendors, who have supported our organization throughout the years.

On the surface, our evolution seems to be a significant change in our business model; fundamentally, however, our mission remains unchanged. We have always believed in building and creating long-term relationships; knowing that a growing, profitable customer is a happy customer, and that happy customers tend to become repeat customers, we have been devoted to seeing that our provided solutions ensure our customer's long-term success.

Over the years, we have learned that there is an inherent conflict of interest in giving away “sound advice” in exchange for “moving boxes.” Such a revenue model inherently leads to the temptation of providing “less-sound” advice in order to maximize the number of outgoing boxes. Add on various volume commitments, stocking requirements and vendor obligations, and a downward spiral ensues.

CWLab continues to:

“TELL THE GOOD, BAD & UGLY AS IT TRULY IS...”

We continue our goal of providing real-world solutions to ensure that you, the customer, will continue to succeed in the last mile arena. However, now, with no vested interest in recommending one particular technology or solution, we ensure vendor-neutral objectivity and carry only your best interests in mind.

We will accomplish this task by:

1. Creating standard definitions for specific performance parameters for products in the BWA industry
2. Utilizing these definitions to provide a common means of evaluation and comparison of product performance within the industry
3. Performing & documenting these tests for consumers in this industry—so that they are able to objectively evaluate the performance of the various product platforms available.
4. Making available, via a subscription service, our knowledge base and experience to consumers as a whole

WE WILL ENSURE THAT OUR CLIENTS HAVE THE MOST COST EFFECTIVE, EASY TO MAINTAIN AND RELIABLE TECHNOLOGY PLATFORM AVAILABLE

-Charles