

WiMAX Forum® Industry Research Report

Review of July, 2009

About

The WiMAX Forum® Industry Research Report is a monthly summary of primary and secondary research and news, provided by WiMAX Forum to the industry. It includes the latest updates on WiMAX Forum-tracked statistics, product certification, regulatory information, technology standards and more. This report will be published and made available on the WiMAX Forum website the first week of every month. If you have any questions or comments regarding the research contained herein, please contact Jonathan Singer, the WiMAX Forum's Market Research Manager at Jonathan.Singer@wimaxforum.org.

Contents

- Global Deployment Update
 - Deployments tracked, Deployments by Frequency
- POPs
 - Regional breakout, Recent Industry Announcements
- Certification
 - Total Products, New Product Summary, Vendor List
- Regulatory Update
 - South Africa: New Draft Regulation for 2.5 GHz Spectrum

Executive Summary

- WiMAX Forum currently tracks 487 WiMAX Deployments in 141 Countries.
- Clearwire launched its commercial Mobile WiMAX service in Las Vegas (USA).
- WiMAX Forum certified 9 new products including more new notebook computers.
- South Africa proposed new draft regulations for auctioning 2.5 GHz spectrum in 30 MHz blocks rather than 20 MHz blocks.
- Green Packet (Malaysia) released a case study detailing its April 27th Live WiMAX Network Tour at WiMAX Forum Asia Congress. View it here: <http://www.wimaxforum.org/resources/documents/marketing/whitepapers>.

Global Deployment Update

This section describes the current state of WiMAX deployments across the world. The data for this tool is delivered to us courtesy of Informa Telecoms & Media, and can be viewed online in more detail at www.wimaxmaps.org. Please note that the numbers below do not represent total WiMAX networks in existence, but rather the total deployments that we currently track. Every month we find more data on new or existing deployments and add them to the database. If you are an operator, please check WiMAX Maps to make sure that your organization's information is accurate. If it is either not there or is inaccurate, please email deploymentdata@wimaxforum.org, and we will update our information immediately.

TOTAL DEPLOYMENTS*

**Note: "Deployments" in this case refers to WiMAX networks that are either in service or planned/in deployment (i.e. base stations are being deployed, but there are few/no subscribers yet).*

Total Deployments Tracked	487
<i>Total Deployments Tracked Last Month</i>	484
Total Countries** with WiMAX Deployments	141
<i>Last Month</i>	141

***Note: "Countries" in this case is representative of distinct telecommunications markets, and therefore this number may equal more than the total number of sovereign nations recognized by*

the UN. For example, Hong Kong and China have different regulatory structures, and are therefore treated as different markets.

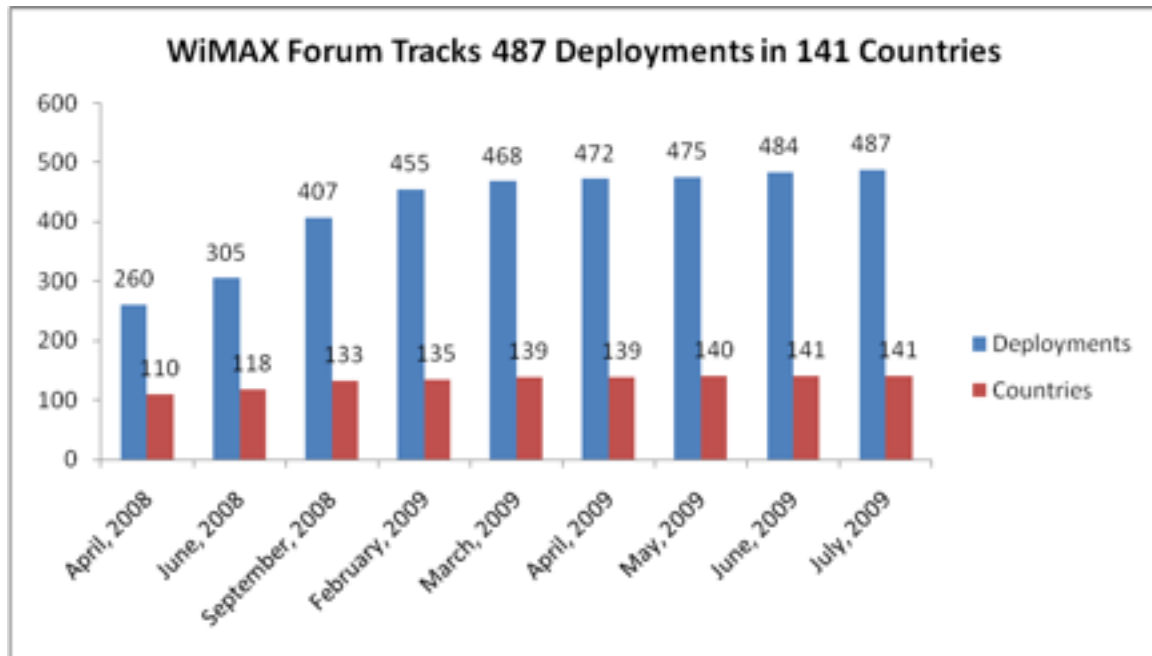
DEPLOYMENTS BY REGION

Africa	101
Asia-Pacific	77
CALA	98
Eastern Europe	77
Middle East	18
North America (USA/Canada)	48
Western Europe	68

DEPLOYMENTS BY FREQUENCY

2.3 GHz Deployments***	29
2.5 GHz Deployments***	64
3.3 GHz Deployments***	9
3.5 GHz Deployments***	240
5+ GHz Deployments***	20

***Note: In above table total deployment by Frequency may not add up to total deployments tracked. The missing deployments' statuses are unknown, and will be confirmed and updated.



For more information please visit www.wimaxmaps.org

POPs Coverage

In February, 2009, WiMAX Forum announced that WiMAX service providers cover at least **430 Million** people. Below is a regional breakout of the estimate:

Region	POPs Covered
Africa	52,000,000
Asia-Pacific	205,000,000
CALA	49,500,000
Eastern Europe	45,300,000
Middle East	20,000,000
North America	28,000,000
Western Europe	34,600,000
TOTAL	434,400,000

These numbers represent an estimate conducted by WiMAX Forum via primary and secondary research of operator POPs coverage on an operator-by-operator basis. Where the operator could not or would not respond to direct inquiry, estimates were made based on public operator statements, number of base stations, government-mandated buildout requirements, and other available information. Proprietary networks (pre-WiMAX/non-WiMAX) were **not included, and geographic overlap of operator coverage areas **was** taken into account.*

Since this research was conducted, many operators have announced changes in POPs coverage. Below are some highlights:

- Bharat Sanchar Nigam Ltd (BSNL) said it plans to launch commercial WiMAX service in Tamil Nadu (India) by November. Over 20 locations in primarily rural parts of the state will be able to access the service.
- Clearwire Communications deployed Mobile WiMAX service to approximately 1.7 million residents across 638 square miles in Las Vegas (U.S.).
- A new international operator, Augere, headed by Sanjiv Ahuja (FT Orange's former mobile lead) announced that it is targeting the 80% of the world's population that is currently out of the reach of broadband Internet connectivity. Initially, Augere will focus on countries in Africa and Asia. The company will work with local partners to bring wireless broadband to these areas, and it is understood that WiMAX will be the technology of choice for these deployments.
- Following the inauguration of its WiMAX services on the offshore Penghu Island in April, Taiwan-based WiMAX operator Tatung InfoComm (TIC) held a launch ceremony on July 8 to kick off its commercial WiMAX services in southern port city of Kaohsiung, which is the 2nd largest city in

Taiwan. The company has built 200 base stations in the city of Kaohsiung, covering 70% of the local population.

- Malaysia's Packet One Networks (P1) announced that P1 WiMAX could be available in Sabah and Sarawak by as early as 2010. The company also said it is on track to meet its target of covering 35% of Malaysia's population within this year.

***If you are a WiMAX operator and wish to be mentioned here, please contact Jonathan Singer, the WiMAX Forum's Market Research Manager at Jonathan.Singer@wimaxforum.org.*

WiMAX Forum Certified™ Products

In July, 2009, WiMAX Forum certified 9 new devices.

	This Month	Last Month
Total WiMAX Forum Certified Products	123	114
<i>Base Stations</i>	<i>49</i>	<i>48</i>
<i>Subscriber/Mobile Stations</i>	<i>74</i>	<i>66</i>

Recent Certified Devices

Below is a list of the WiMAX devices certified in June, 2009:

Company	Product Name	Product Type	Frequency
ZTE	E9230 W200/W300	Base Station	2.5 GHz
PointRed Telecom	PointMAX 1100 USB Modem	Mobile Station	2.5 GHz
Acer Inc.	Aspire One	Mobile Station	2.5 GHz
Toshiba	Dynabook UX 2xJ	Mobile Station	2.5 GHz
Intel	Wireless Multiconnection MWM3280	Mobile Station	2.5 GHz & 3.5 GHz
Intel	Centrino Advanced-N + WiMAX 6250	Mobile Station	2.5 GHz & 3.5 GHz
C-motech Co., Ltd.	USB Type CDMA & WiMAX Modem	Mobile Station	2.5 GHz
Micro-Star International	X340 Mobile Station	Mobile Station	2.5 GHz
Cisco	BWX 350-342 USB Modem	Mobile Station	3.5 GHz

WiMAX Forum Certified Product Vendors

WiMAX Vendors with WF Certified Products	Total
Base Station Vendors	25
Subscriber/Mobile Station Vendors	39

- Base Station Vendors
 - Airspan Networks, Alcatel-Lucent, Alvarion, Aperto Networks, Axxcelera, Cisco Systems, E.T. Industries, Huawei Technologies, Motorola, NEC, Nokia Siemens Networks, Nortel, PointRed Telecom Pvt Ltd, POSDATA, Proxim Wireless Corporation, Redline Communications, Runcom Technologies Ltd., Samsung, Selex Communications, SEQUANS Communications, Soma Networks, SR Telecom, Telsima, WiNetworks, ZTE Corporation
- Subscriber/Mobile Station Vendors
 - Acer Incorporated, Airspan Networks, Alcatel-Lucent, Alvarion, Aperto Networks, Axxcelera Broadband Wireless, Beceem, Cisco Systems, C-motech Co. Ltd., E.T. Industries, Fujitsu, GCT Semiconductor, Inc., Gigaset Communications, Huawei Technologies, Intel Corporation, Micro-star International, MITSUMI ELECTRIC CO.,LTD., MODACOM Co., Ltd., Motorola, NEC, Oki Electric Industry Co., Ltd., Onkyo, Panasonic, PointRed Telecom, POSDATA, Redline Communications, Runcom Technologies Ltd., Samsung, Selex Communications, SEOWON INTECH Co., Ltd., SEQUANS Communications, Siemens AG, Sony, SR Telecom, Telsima, Toshiba, Wavesat Inc., ZTE Corporation, ZyXEL Communications Inc.

Regulatory Update

In partnership with WiMAX Forum Regulatory Working Group, AT4 Wireless maintains a detailed [Spectrum & Regulatory database](#). The database provides

regular monthly updates detailing global regulatory proceedings. Below is a free, extracted highlight from this month's report:

- **South Africa: New draft regulations outlining spectrum use** - The Independent Communications Authority of South Africa (ICASA) has published draft regulations, which outline the procedures and criteria for granting spectrum licenses to operators. This new plan will allocate 30 MHz of spectrum in the 2.6 GHz band to four separate operators. This is a change from the original licensing plan under which operators were only allocated 20 MHz. The regulator also announced that operators that are unable to make use of the spectrum within a reasonable amount of time stand to have the licenses revoked.