

# WIMAX - BUILDING BLOCKS

A WiMAX system consists of two major parts:

- A WiMAX base station.
- A WiMAX receiver.

## WiMAX Base Station

A WiMAX base station consists of indoor electronics and a WiMAX tower similar in concept to a cell-phone tower. A WiMAX base station can provide coverage to a very large area up to a radius of 6 miles. Any wireless device within the coverage area would be able to access the Internet.

The WiMAX base stations would use the MAC layer defined in the standard, a common interface that makes the networks interoperable and would allocate uplink and downlink bandwidth to subscribers according to their needs, on an essentially real-time basis.

Each base station provides wireless coverage over an area called a cell. Theoretically, the maximum radius of a cell is 50 km or 30 miles however, practical considerations limit it to about 10 km or 6 miles.

## WiMAX Receiver

A WiMAX receiver may have a separate antenna or could be a stand-alone box or a PCMCIA card sitting in your laptop or computer or any other device. This is also referred as customer premise equipment *CPE*.

WiMAX base station is similar to accessing a wireless access point in a WiFi network, but the coverage is greater.

## Backhaul

A WiMAX tower station can connect directly to the Internet using a high-bandwidth, wired connection *for example, a T3 line*. It can also connect to another WiMAX tower using a line-of-sight microwave link.

Backhaul refers both to the connection from the access point back to the base station and to the connection from the base station to the core network.

It is possible to connect several base stations to one another using high-speed backhaul microwave links. This would also allow for roaming by a WiMAX subscriber from one base station ~~coverage area to another similar to the roaming enabled by cell phones.~~

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