The system is based on front-end elements that condition and convert the BTS WiMAX signal to an optic signal for transmission over single mode fiber optics to the head-end elements, and on head-end elements that reconvert the WiMAX optic signal to RF and distribute it over the antenna infrastructure at that location. In addition, Controllers located at the front-end provide end-to-end remote control and management.

The MA WiMAX system can be converged with another MA mobile service indoor distribution systems (such as MA2000, MA1000, etc.), where the systems run in parallel and share some of the same front-end elements and the antenna infrastructure.

The MA WiMAX system **front end elements** are:

- MA WiMAX RIU – conditions the RF signal from the BTS to the level required by the Base Unit. Each RIU supports two WiMAX channels (for MIMO) and two base 4 units (for 8 remote units).
- MA Multi-service Base Unit – converts the WIMAX channels to optic signal for transmission over one set of optical fibers.
- MA 410 controller – provides management and control functions to all system elements. The Controller is directly connected to the RIU modules and to the BUs.

  Note: The RIU, Base Units and Controller are located at the head-end (i.e. communication room).

The WiMAX systems **remote location** elements are:

- WiMAX RHU – located at each remote location, IDF or telecom closet. Performs the optic to RF conversion of the WiMAX signals and provides the interface (power and communications) to the remote antenna unit (RU) via which the signals are distributed.
- Remote Antenna Unit (RU) – provides final preparation of the WIMAX signals for distribution via the ceiling antenna(s). The RU has two antenna ports to support MIMO.