



GE MDS

175 Science Parkway, Rochester, New York 14620 USA
(585) 242-9600 Phone
(585) 242-9620 Fax
May 17th, 2010

Applicant: GE MDS LLC.
Product: MERCURY3650-MIMO

Dear Sir/Madam,
Elliott TCB
684 W. Maude Avenue
Sunnyvale, CA 94085

Mercury 3650 Contention protocol:

Referencing document FCC-07-99A1, Paragraph 34 describes unrestricted and restricted contention-based protocols, respectively: *“Those contention protocols that we refer to as unrestricted protocols are broadly compatible and function to prevent interference even with other, dissimilar contention technologies on the market.”* and *“On the other hand, restricted contention protocols can prevent interference only with other devices incorporating the same protocol.”*

The Mercury 3650 employs WiMAX scheduling that is categorized as a restricted contention protocol. The WiMAX contention protocol used in the Mercury 3650 allows for coordination to avoid interference with other WiMAX operators, but does not provide the ability to prevent interference to other spectrum users employing alternate interference technology.


The MDS Mercury 3650 employs an IEEE 802.16D WiMAX chipset for the media access control and modem. The WiMAX protocol standard provides a point-to-multipoint channel access scheme that is controlled by the base station. The MDS Mercury 3650 uses Time Division Duplex causing the downlink to operate for part of the time and the uplink to operate for part of the time. The base station to subscriber station communications, also known as the downlink, is controlled entirely by the base station. In the uplink, the subscriber station uses contention opportunities scheduled by the base station to request an allocation of bandwidth for sending payload data. The base station answers these requests by providing bandwidth grants. If a subscriber station does not receive a bandwidth grant within an interval of time it will resubmit its request on its next contention opportunity. If the subscriber station continues to not get a bandwidth grant it

will discard the payload frame. Contentions are resolved using a truncated binary exponential backoff. The base station controls both the initial and maximum backoff windows. When contending, the subscriber station randomly chooses a number of deferred contention opportunities before transmitting.

The Mercury 3650 allows the installer to configure an Approved Access Point list that contains the MAC addresses of desired AP radios in the network. When an Access Point sends scheduling data to the Mercury 3650 remote, the remote compares the MAC Address of the AP to this approved MAC address list, and discards the scheduling information if it has originated from a foreign network. This allows coexistence with co-channel WiMAX networks with minimal interference.

If you have any queries, please do not hesitate to contact me at 585 242-8440:

Yours truly,

Signed:  Name: Dennis McCarthy

Dennis McCarthy
Agency Compliance Engineer
GE MDS
175 Science Parkway
Rochester NY 14620
Phone (585) 242-8440
Email Dennis.McCarthy2@GE.com