Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Proposed text for P802.16m Requirements Document -- Section 6**	
Date Submitted	**2007-02-25**	
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Re:	IEEE 802.16m-07/004r1 – Call for Contributions for P802.16m Requirements	
Abstract	Proposed draft text for 802.16m Requirements Document -- Section 6	
Purpose	Incorporate into the draft-802.16m Requirements Document	
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Proposed Text for P802.16m Requirements Document – Section 6

Alcatel-Lucent 16m team

6.0 Functional Requirements

6.1 Peak Data Rate

Peak air interface data rates shall meet or exceed the minimum rates to be defined by the ITU-R for IMT-Advanced.
Note: At the present, the ITU-R Recommendation M.1645 [4] §4.2.5 envisions data rates (at the Cellular Level) has high as 100 Mbit/s for high mobility and 1Gbit/s for low mobility such as nomadic/local wireless access. M.1645 also states: "These data rates are targets for research and investigation. They should not be taken as the definitive requirements for systems beyond IMT-2000".

Peak rates
The peak rates depend, among other channel parameters, on the channel bandwidth. For 20 MHz channel, the terminal should be able to achieve a peak data rate in the range of 75 to 150 Mbit/s.. This is considered a maximum requirement in good channel conditions. For other bandwidths, the data rates shall scale accordingly. A base station sector should be able to achieve a peak aggregate data rate of up to 1 Gbit/s.

Duplex mode
Both TDD and FDD operation should be supported. In FDD operation, half-duplex terminals should also be supported.

DL/UL ratio
Symmetrical operation should be supported in addition to asymmetrical operation. To ensure maximum dynamic throughput, the UL/DL ratio should be configurable. In TDD mode, the UL/DL should be adjustable per frame. In FDD mode, the UL and DL channel bandwidths may be different and should be configurable.

Maximum allowed packet reception/transmission outage time
The outage time of user traffic packets, during handoff, shall be specified depending on the type of handoff mechanism and depending on the application type. At least two types of handoff mechanisms should be specified:
- Type-1 allows fast handoff times through usage of additional MAC and radio resources. Design target for Type-1 is 20 ms or better outage time.
- Type-2 is more efficient with respect to radio resource usage but leads to longer handoff times. Design target for Type-2 is 50 ms.

Trade-off between mobility and data rate
For mobility-performance classification purposes, the required performance values should be established for four mobility speed classes:
- 0 to 5 km/h: optimum performance.
- 5 to 60 km/h: high performance.
- 60 to 120 km/h: medium performance.
- 120 to 350 km/h: basic performance.
The acceptable performance rates for each class are TBD.

6.2 Latency

PHY-MAC roundtrip delay
The requirement for the PHY-MAC roundtrip delay should respect the different types of services. Different values may be specified for:

- VoIP and other real-time-services
- Audio/video streaming
- Broadcast/multicast services
- HARQ.

The specific values of acceptable roundtrip delay, for each case, are TBD. These values may differ slightly from TDD to FDD modes.

High bandwidth real-time services and gaming applications shall be supported.

6.3 QoS

6.4 Radio Resource Management

6.5 Security