Project	**IEEE 802.20 Working Group on Mobile Broadband Wireless Access** <http://ieee802.org/20/>
Title	**MBFDD Requirements Compliance Report**
Date Submitted	**2006-01-06**
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Re:	MBWA Call for Proposals
Abstract	This contribution (part of the MBFDD proposal package for 802.20), contains the MBFDD Requirements Compliance Report.
Purpose	For consideration of 802.20 in its efforts to adopt an FDD proposal for MBWA.
Notice	
Release	
Patent Policy	

1 System Requirements Compliance Report

#	Requirement	SRD[1] Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
1	PAR requirements	1.3	●		X	See Section 2 of [1]
2	VoIP Services	2.1	●		X	See Section 3.3 of [3]
3	Broadcast – Multicast services	2.2	●		X	See Sections 7.5 and 10.2 in [3]
4	Non-line of sight outdoor to indoor scenarios and indoor coverage	3.1	●		X	See link budget calculation in Section 3.5 of [1].
5	Layered architecture and separation of functionality between user, data and control	3.1	●		X	See Chapter 1 of [3]
6	Spectral efficiency – DL @ 3 km/hr: 2.0b/s/Hz/sector	4.1.1	●		X	2.20 b/s/Hz/sector, see Section 4.3 of [1]
7	Spectral efficiency – DL @ 120km/hr: 1.5b/s/Hz/sector	4.1.1	●		X	1.92 b/s/Hz/sector, see Section 4.3 of [1]
8	Spectral efficiency – UL @ 3km/hr: 1.0b/s/Hz/sector	4.1.1	●		X	1.38 b/s/Hz/sector, see Section 4.3 of [1]
9	Spectral efficiency – UL @ 120km/hr: .75b/s/Hz/sector	4.1.1	●		X	1.18 b/s/Hz/sector, see Section 4.3 of [1]
10	Block assignment support	4.1.2	●		X	Support different block assignments between 5 and 20 MHz, see Chapter 8 of [3]
11	Duplexing Scheme	4.1.3	●		X	See Section 9.1 of [3]
12	Support for Half Duplex FDD subscriber station.	4.1.3		○	X	See Sections 2.5.8.1 and 6.5.6.3.1 of [3]
13	Support for different mobility rates	4.1.4	●		X	See Section 3.3 of [1]
14	Aggregated data rate consistent with item 6	4.1.5	●		X	10.9 Mbps, see Section 4.4 of [1]

[1] SRD: IEEE802-20-PD-06 “System Requirements for IEEE 802.20 Mobile Broadband Wireless Access Systems – Version 14”

#	Requirement	SRD[1] Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
15	Aggregated data rate consistent with item 7	4.1.5	●		X	9.6 Mbps, see Section 4.4 of [1]
16	Aggregated data rate consistent with item 8	4.1.5	●		X	6.9 Mbps, see Section 4.4 of [1]
17	Aggregated data rate consistent with item 9	4.1.5	●		X	5.9 Mbps, see Section 4.4 of [1]
18	Peak User Data Rate (DL) of 4.5 Mbps in 1.25 MHz	4.16	●		X	DL peak rate is 65 Mbps for users in 5 MHz deployment. If the assignment is restricted to 1.25 MHz, the peak rate is 15.1 Mbps, see Section 4.2 of [1]
19	Peak User Data Rate (UL) of 2.25 Mbps in 1.25 MHz	4.16	●		X	UL peak rate is 16 Mbps for users in 5 MHz deployment. If the assignment is restricted to 1.25 MHz, the peak rate is 4 Mbps, see Section 4.2 of [1]
20	Peak User Data Rate (DL) of 18 Mbps in 5.0 MHz	4.16	●		X	65 Mbps, See Section 4.2 of [1]
21	Peak User Data Rate (UL) of 9 Mbps in 5.0 MHz	4.16	●		X	16 Mbps, See Section 4.2 of [1]
22	MAC layer to control >100 simultaneous active sessions per sector. (See section for conditions.)	4.1.7		○	X	MACID space for greater than 2000 active sessions in a 5 MHz. REQ opportunity every 5.5 ms for active sessions. See Section 7.4 and Section 7.6 of [3].
23	QoS support per requirements in section 4.1.8	4.1.8	●		X	See Section 3.3 of [3] and Section 3 of [2].
24	Support the configuration of a flexible set variety of traffic classes (see section 4.1.8.1)	4.1.8.1	●		X	See Section 3.3 Data Transport of [3] and QoS section of [2].
25	MAC/PHY features to support multi-antenna capabilities at the BS	4.1.9	●		X	Support MIMO, STTD, precoding, SDMA and QORL, see Sections 17, 20, 21, 22 and 23 of [2]
26	Base station antenna diversity	4.1.10		○	X	Support RL diversity antenna and QORL, see Section 17 of [2]
27	Support coverage enhancing technologies	4.1.11	●		X	Support frequency reuse, beamforming and precoding. See Sections 18 and 21 of [2]
28	BS authentication	4.1.12	●		X	See Sections 4.2 and 5.5 of [3]

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			Shall	Should	Yes	Notes
29	MT authentication	4.1.12	●		X	See Sections 4.2 and 5.5 of [3]
30	Network and mobile terminal perform mutual entity authentication and session key agreement protocol	4.1.12.1	●		X	See Sections 4.2 and 5.5 of [3]
31	Privacy and message integrity methods	4.1.12.2	●		X	See Chapter 5 of [3]
32	Support for encryption across the air interface	4.1.12.2	●		X	See Chapter 5 of [3]
33	Protection from unauthorized disclosure of the device permanent identity to passive attackers	4.1.12.3	●		X	UATI is not derived from AT HW ID. See Chapter 2 of [3].
34	Protection against Denial of Service (DOS) attacks	4.1.12.4	●		X	Provides encryption and authentication of all messages and data. See Chapters 4 & 5 of [3].
35	AES Support	4.1.12.5	●		X	See Section 5.6 of [3]
36	Automatic selection of optimized user data rates that are consistent with the RF environment constraints and application requirements	4.2.1	●		X	Support CQI reporting, HARQ, rate adaptation and RLP, See Chapter 7 and Section 3.3 in [3]
37	Graceful reduction or increase of user data rates, on the downlink and uplink	4.2.1	●		X	Support CQI reporting, HARQ and rate adaptation, See Chapter 7 in [3]
38	Link adaptation	4.2.1	●		X	Support CQI reporting, HARQ and rate adaptation, See Chapter 7 in [3]
39	BS and MS transmit power control mechanisms and exchange control and monitoring information	4.2.1		○	X	Support FL and RL power control, active set management and overhead messages. See Section 6.5 and 6.6 of [3] and Section 15 of [2].

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40	Application in dense urban, urban, suburban, rural, outdoor-indoor, pedestrian, and vehicular environments and the relevant channel models	4.2.2	●		X	See Section 3.3 of [1] for robust link performance under different speed and multipath. See Section 3.5 of [1] for link budget.
41	Physical layer Measurements – BS	4.2.4	●		X	See Section 6.5 of [3].
42	Physical layer Measurements – MS	4.2.4	●		X	See Sections 6.6 and 7.6 of [3].
43	Design extensible to wider channels	4.3	●		X	Support multiple blocks. See Chapter 8 of [3].
44	Mechanisms for quality of service (QOS) control and monitoring	4.4.1	●		X	See Section 3.3 of [3].
45	Interfaces and procedures that facilitate the configuration, negotiation, and enforcement of QoS policies	4.4.1	●		X	See Section 3.3 of [3].
46	Support both IPv4 and IPv6	4.5	●		X	See Section 3.3 of [3].
47	Handoff methods	4.5.1	●		X	See Section 2 and 16 of [2].
48	Allow the use of either MobileIPv4, MobileIPv6 or of SimpleIP	4.5.1.1	●		X	See Section 2 of [2] and Section 3.3 of [3].
49	Mechanism to enable the provisioning and collection of metrics	4.5.2	●		X	Provides additional independent transport for provisioning and collection of metrics, see Section 3.4 of [3]. Also defines MIB in chapter 13 of [3].
50	Not preclude proprietary scheduling algorithms, so long as the standard control messages, data formats, and system constraints are observed	4.6	●		X	Provide mobile and sector information to support proprietary scheduling algorithms. See Section 3.4 and 7.6 of [3] and Section 8 of [2].

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			Shall	Should	Yes	Notes
51	Power conservation features to improve battery life for idle mobile terminals	4.7	●		X	Support idle state and selected interlace operation. See Section 6.3 and 6.4 of [3].

2 References

[1] IEEE C802.20-05/61r1 “MBFDD Performance Report 1.”

[2] IEEE C802.20-05/68r1 “MBFDD and MBTDD Wideband Mode: Technology Overview.”

[3] IEEE C802.20-06/04 “MBFDD and MBTDD: Proposed Draft Air Interface Specification.”