Project	**IEEE 802.20 Working Group on Mobile Broadband Wireless Access** <**http://grouper.ieee.org/groups/802/20/**>	
Title	**UMBFDD System Requirements Compliance Report**	
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Re:	MBWA Call for Proposals (802.20 - 07/02)
Abstract	This contribution contains the system requirements compliance report for the UMBFDD proposal. It is part of the UMBFDD proposal package.
Purpose	For consideration by 802.20 as it evaluates proposals for FDD MBWA.
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System Requirements Document Compliance Table

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
1	PAR requirements	1.3	●		X	See section 3 of [1]
2	VoIP Services	2.1	●		X	See sections 6,8 and 9 of [1]
3	Broadcast – Multicast services	2.2	●		X	See [1].
4	non-line of sight outdoor to indoor scenarios and indoor coverage	3.1	●		X	See section 2.3, Link Budget, of [1]
5	layered architecture and separation of functionality between user, data and control	3.1	●		X	See [1]
6	Spectral efficiency – DL @ 3 km/hr: 2.0b/s/Hz/sector	4.1.1	●		X	3.99 b/s/Hz/sector. See section 7.3 of [1]
7	Spectral efficiency – DL @ 120km/hr: 1.5b/s/Hz/sector	4.1.1	●		X	3.09 b/s/Hz/sector. See section 7.3 of [1]
8	Spectral efficiency – UL @ 3km/hr: 1.0b/s/Hz/sector	4.1.1	●		X	1.23 b/s/Hz/sector. See section 7.3 of [1]
9	Spectral efficiency – UL @ 120km/hr: .75b/ s/Hz/sector	4.1.1	●		X	1.02 b/s/Hz/sector. See section 7.3 of [1]
10	Block assignment support	4.1.2	●		X	See Table 1.8.1.2-1 of [1]. Supports block assignment sizes between

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
						1.25 and 20MHz.
11	Duplexing Scheme	4.1.3	●		X	This is a complete FDD proposal.
12	Support for Half Duplex FDD subscriber station.	4.1.3		○	X	See section 1.8 of [5]
13	Support for different mobility rates	4.1.4	●		X	See sections 4 and 7 of [1]
14	Aggregated data rate consistent with item 6	4.1.5	●		X	20.1 Mbps on DL @ 3 kph. See section 7.2 of [1]
15	Aggregated data rate consistent with item 7	4.1.5	●		X	15.7 Mbps on DL @ 120 kph. See section 7.2 of [1]
16	Aggregated data rate consistent with item 8	4.1.5	●		X	6.15 Mbps on UL @ 3 kph. See section 7.2 of [1]
17	Aggregated data rate consistent with item 9	4.1.5	●		X	5.1 Mbps on UL @ 120 kph. See section 7.2 of [1]
18	Peak User Data Rate (DL) of 4.5 Mbps in 1.25 MHz	4.1.6	●		X	DL peak rate is 13.5 Mbps in a 1.25MHz deployment. See section 7.1 of [1]
19	Peak User Data Rate (UL) of 2.25 Mbps in 1.25 MHz	4.1.6	●		X	UL peak rate is 4 Mbps in a 1.25MHz deployment. See section 7.1 of [1]
20	Peak User Data Rate (DL) of 18 Mbps in 5.0 MHz	4.1.6	●		X	DL peak rate is 67 Mbps in a 5MHz deployment. See

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
						section 7.1 of [1]
21	Peak User Data Rate (UL) of 9 Mbps in 5.0 MHz	4.1.6	●		X	UL peak rate is 21 Mbps in a 5MHz deployment. See section 7.1 of [1]
22	MAC layer to control >100 simultaneous active sessions per sector. (See section for conditions.)	4.1.7		○	X	Unique MAC IDs for at least 512 active sessions in a 5MHz deployment. See 7.6.5.2 of [1]
23	QoS support per requirements in section 4.1.8	4.1.8	●		X	See overview in section 1.3 of [4].
24	Support the configuration of a flexible set variety of traffic classes (see section 4.1.8.1)	4.1.8.1	●		X	Section 2 (Basic QoS Management Protocol) of [9] employs QoS profiles (currently defined: 60) specified in 3GPP2 C.R1001-F section 13 and QoS parameters (currently defined: 8) specified in 3GPP2 X.S0011-004-D Annex E.
25	MAC/PHY features to support multi-antenna capabilities at the BS	4.1.9	●		X	Supports MIMO SCW and MCW, STTD, precoding, SDMA. See section 1.9 of [5]

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
26	Base station antenna diversity	4.1.10		○	X	Base Station provides antenna diversity.
27	Support coverage enhancing technologies	4.1.11	●		X	Supports beamforming, frequency reuse and precoding.
28	BS authentication	4.1.12	●		X	See [8]
29	MT authentication	4.1.12	●		X	See [8]
30	Network and mobile terminal perform mutual entity authentication and session key agreement protocol.	4.1.12.1	●		X	See [8]
31	Privacy and message integrity methods	4.1.12.2	●		X	See [8]
32	Support for encryption across the air interface.	4.1.12.2	●		X	See [8]
33	Protection from unauthorized disclosure of the device permanent identity to passive attackers.	4.1.12.3	●		X	See [8]
34	Protection against Denial of Service (DOS) attacks	4.1.12.4	●		X	See [8]
35	AES Support	4.1.12.5	●		X	See [8]
36	automatic	4.2.1	●		X	Procedures are

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
	selection of optimized user data rates that are consistent with the RF environment constraints and application requirements					described in [2]
37	Graceful reduction or increase of user data rates, on the downlink and uplink	4.2.1	●		X	Procedures are described in [2]
38	Link adaptation	4.2.1	●		X	Procedures are described in [2]
39	BS and MS transmit power control mechanisms and exchange control and monitoring information	4.2.1		○	X	Procedures are described in [2]
40	Application in dense urban, urban, suburban, rural, outdoor-indoor, pedestrian, and vehicular environments and the relevant channel models.	4.2.2	●		X	
41	Physical layer Measurements - BS	4.2.4	●		X	
42	Physical layer Measurements - MS	4.2.4	●		X	
43	Design extensible to	4.3	●		X	

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
	wider channels.					
44	Mechanisms for quality of service (QOS) control and monitoring.	4.4.1	●		X	See [9]
45	Interfaces and procedures that facilitate the configuration, negotiation, and enforcement of QoS policies	4.4.1	●		X	See [9]
46	Support both IPv4 and IPv6.	4.5	●		X	
47	Handoff methods	4.5.1	●		X	
48	Allow the use of either MobileIPv4, MobileIPv6 or of SimpleIP	4.5.1.1	●		X	
49	Mechanism to enable the provisioning and collection of metrics.	4.5.2	●		X	
50	Not preclude proprietary scheduling algorithms, so long as the standard control messages, data formats, and system constraints are observed.	4.6	●		X	There is nothing in standard that precludes the use of proprietary scheduling algorithms.
51	Power conservation features to improve battery life for idle	4.7	●		X	Supported by MAC Layer procedures defined in [2].

#	Requirement	SRD Section #	Requirement Type		Compliance Level	
			Shall	Should	Yes	Notes
	mobile terminals.					

References

[1] IEEE C802.20-07/12 "UMBFDD Performance Evaluation Report 1"

[2] C.P0084-0-002 Medium Access Control Layer For Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip

[3] C.P0084-0-009 Broadcast-Multicast Upper Layer for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip

[4] C.P0084-0-000 Overview for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip

[5] C.P0084-001 Physical Layer for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084_v0.88_PHY_UMB-VV_Due_23_March-2007.pdf

[6] C.P0084-0-006 Connection Control Plane for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip

[7] IEEE C802.20-07/09 "UMBFDD Technology Overview"

[8] C.P0084-0-005 Security Functions for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip

[9] C.P0084-0-003 Radio Link Layer for Ultra Mobile Broadband (UMB) Air Interface Specification, V&V text. Available at http://www.3gpp2.org/Public_html/Misc/C.P0084-0_UMB_UpperLayer-VV(9Parts)_Due_23_March-2007.zip