TSG-RAN Meeting #25 PALM SPRINGS, CA USA, 7 - 9 September 2004

RP-040378

Agenda Item: 7.1 Source: RAN

Title: Proposed Final Submission toward Rev 5 of M.1457

Document for: Approval

[ITU member] 1

UPDATED MATERIAL ON IMT-2000 CDMA DS AND IMT-2000 CDMA TDD FOR REVISION 5 OF ITU-R M.1457

This contribution contains the updated material on IMT-2000 CDMA DS and IMT-2000 CDMA TDD for Revision 5 of Recommendation ITU-R M.1457 in line with 8/LCCE/95 and TEMP/20Rev1.

In particular, the material required as specified in the update procedure for revisions of Recommendation ITU-R M.1457 (8/LCCE/95) is addressed in the following annexes:

Annex 1: update of Sections 5.1.2 & 5.3.2

Annex 2: modifications to Sections 5.1.1 and 5.3.1

Annex 3: updated GCS

Annex 4: summary and rationale of the proposed update

Annex 5: self-evaluation of the proposed update against the evaluation criteria

Annex 6: self-declaration that the proposed amendments are self-consistent between Section 5.1.1, Section 5.1.2, and the GCS, as well as between Section 5.3.1, Section 5.3.2, and the GCS.

¹ This contribution was developed in 3GPP TSG RAN.

ANNEX 1*

Update of Sections 5.1.2 & 5.3.2

[See RP-040310 & RP-040312]

ANNEX 2

Modifications to Sections 5.1.1 and 5.3.1

[See RP-040309 & RP-040311]

ANNEX 3

Updated GCS

The updated set of the Global Core Specifications (GCS) for IMT-2000 CDMA DS and IMT-2000 CDMA TDD are available in Doc 8F/XXX [See RP-040313].

ANNEX 4

Summary and Rationale of the proposed update

The main purpose of this update is to align Rec. ITU-R M.1457 to the most updated versions of the Specifications of IMT-2000 CDMA DS and IMT-2000 CDMA TDD, including some features of Release 6. In particular, features for Enhanced Uplink have been introduced, allowing for improved capacity and coverage, higher data rates than the current uplink maximum, and reduced delay and delay variance for the uplink. In addition, support for Multimedia Broadcast and Multicast Services has been provided, allowing for multimedia content distribution to groups of users over a point-to-multipoint bearer.

ANNEX 5

^{*} As per established procedures, not all stakeholder SDOs need necessarily to transpose each document.

Self-evaluation of the proposed update against the evaluation criteria

The self-evaluation of the "total" radio interfaces (update IMT-2000 CDMA DS and IMT-2000 CDMA TDD) has been made against all evaluation criteria listed in the update procedure contained in 8/LCCE/95. The results are that the proposed updates meet the evaluation criteria as follows:

7.1 "The Evaluation Criteria" (Section 7.1 in 8/LCCE/95)

The "requirements and Objectives of IMT-2000" and the "Minimum Performance Capabilities for IMT-2000" as per Attachments 4 and 6 of Circular Letter 8/LCCE/47 were considered. The values included in Circular Letter 8/LCCE/47 were used. The proposed updates consist of enhancements to the existing IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces. The evaluation of the proposed update was done in the context of the "total" radio interface. As shown in the tables below, the conclusion is that the IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces with the proposed enhancements continue to meet all evaluation criteria in "Requirements and Objectives of IMT-2000" and "Minimum Performance Capabilities for IMT-2000".

TABLE 1

Requirements and Objectives Relevant to the Evaluation of Candidate Radio Transmission Technologies

IMT-2000 Item Description	Obj/Req	Source	Meets
Voice and data performance requirements			
1. One-way end to end delay less than 40 ms	Req	G.174,	YES
		§ 7.5	
2. For mobile videotelephony services, the IMT-2000 terrestrial	Req	Suppl.	YES
component should operate so that the maximum overall delay (as		F.720,	
defined in ITU-T Recommendation F.720) should not exceed 400 ms, with the one way delay of the transmission path not exceeding		F.723,	
150 ms		G.114	
3. Speech quality should be maintained during ≤3% frame	Req	G.174,	YES
erasures over any		§ 7.11 and	
10 second period. The speech quality criterion is a reduction of		M.1079	
≤0.5 mean opinion score unit (5 point scale) relative to the error- free condition		§ 7.3.1	
(G.726 at 32 kbit/s)			
4. DTMF signal reliable transport (for PSTN is typically less than	Req	G.174, § 7.11 and	YES
one DTMF error signal in 10 ⁴)		M.1079	
		§ 7.3.1	
	D	-	MEG
5. Voiceband data support including G3 facsimile	Req	M.1079	YES
		§ 7.2.2,	
6. Support packet switched data services as well as circuit	Req	M.1034	YES
switched data; requirements for data performance given in ITU-		§§ 10.8,	

IMT-2000 Item Description	Obj/Req	Source	Meets
TG.174		10.9	
Radio interfaces and subsystems, network related performance	requiremen	ts	
7. Network interworking with PSTN and ISDN in accordance with Q.1031 and Q.1032	Req	M.687-1. § 5.4	YES
8. Meet spectral efficiency and radio channel performance requirements of M.1079	Req	M.1034.§ 12.3.3/4	YES
9. Provide phased approach with data rates up to 2 Mbit/s in phase 1	Obj	M.687, § 1.1.14	YES
10.Maintain bearer channel bit-count integrity (e.g. synchronous data services and many encryption techniques)	Obj	M.1034,§ 10.12	YES
11. Support for different cell sizes, for example: Mega cell Radius~100-500 km Macro cell Radius ≤35km, Speed ≤500 km/h Micro cell Radius ≤1km, Speed ≤100 km/h	Obj	M.1035,§ 10.1	YES
Pico cell Radius ≤50m, Speed ≤10 km/h			
Application of IMT-2000 for fixed services and developing cour	ntries		
12. Circuit noise- idle noise levels in 99% of the time about 100pWp	Obj	M.819-1, § 10.3	YES
13. Error performance - as specified in ITU-R F.697	Obj	M.819-1, § 10.4	YES
14. Grade of service better than 1%	Obj	M.819-1, § 10.5	YES

TABLE 2

Generic Requirements and Objectives Relevant to the Evaluation of Candidate Radio Transmission Technologies

IMT-2000 Item Description	Obj/Req	Source	Meets
Radio interfaces and subsystems, network related perform	nance requi	rements	
1. Security comparable to that of PSTN/ISDN	Obj	M.687-1,	YES
		§ 4.4	
2. Support mobility, interactive and distribution services	Req	M.816,	YES
		§ 6	
3. Support UPT and maintain common presentation to users	Obj	M.816,	YES
		§ 4	
4. Voice quality comparable to the fixed network (applies to both	Req	M819-1,	YES
mobile and fixed service)		Table 1,	
		M.1079, § 7.1	
		8 7.1	
5. Support encryption and maintain encryption when roaming and during handover	Req	M.1034 § 11.3	YES
auring names (e)		3 11.3	

IMT-2000 Item Description	Obj/Req	Source	Meets
6. Network access indication similar to PSTN (e.g. dialtone)	Req	M.1034	YES
		§§ 11.5	
7. Meet safety requirements and legislation	Req	M.1034,	YES
		§ 11.6	
8. Meet appropriate EMC regulations	Req	M.1034,	YES
		§ 11.7	
9. Support multiple public/private/residential IMT-2000 operators	Req	M.1034,	YES
in the same locality		§ 12.1.2	
10. Support multiple mobile station types	Req	M.1034,	YES
		§ 12.1.4	
11. Support roaming between IMT-2000 operators and between	Req	M.1034,	YES
different IMT-2000 radio interfaces/environments		§ 12.2.2	
12. Support seamless handover between different IMT-2000	Req	M.1034,	YES
environments such that service quality is maintained and signaling		§ 12.2.3	
is minimized	D	N 1004	MEG
13. Simultaneously support multiple cell sizes with flexible base location, support use of repeaters and umbrella cells as well as	Req	M.1034,	YES
deployment in low capacity areas		§ 12.2.5	
14. Support multiple operator coexistence in a geographic area	Req	M.1034,	YES
		§ 12.2.5	
15. Support different spectrum and flexible band sharing in	Req	M.1034,	YES
different countries including flexible spectrum sharing between different IMT-2000 operators (see M.1036)		§ 12.2.8	
16. Support mechanisms for minimizing power and interference	Req	M.1034,	YES
between mobile and base stations	Req	§ 12.2.8.3	LES
17. Support various cell types dependent on environment	Req	M.1034,	YES
(M.1035 § 10.1)	rtoq	§ 12.2.9	125
18. High resistance to multipath effects	Req	M.1034,	YES
To Tingi Tesistance to manipum effects	rtoq	§ 12.3.1	125
19. Support appropriate vehicle speeds (as per § 7)	Req	M.1034.	YES
Note: applicable to both terrestrial and satellite proposals	1104	§ 12.3.2	120
20. Support possibility of equipment from different vendors	Req	M.1034,	YES
20. Suppose possionity of equipment from uniterest venues.	1104	§ 12.1.3	120
21. Offer operational reliability at least as good as 2nd generation	Req	M.1034,	YES
mobile systems	1	§ 12.3.5	
22. Ability to use terminal to access services in more than one	Obj	M.1035,	YES
environments desirable to access services from one terminal in all environments		§ 7.1	
23. End-to-end quality during handover comparable to fixed services	Obj	<i>M.1034-1</i> § 11.2.3.4	YES
24. Support multiple operator networks in a geographic area without requiring time synchronization	Obj		YES

IMT-2000 Item Description	Obj/Req	Source	Meets
25. Layer 3 contains functions such as call control, mobility management and radio resource management some of which are radio dependent. It is desirable to maintain layer 3 radio transmission independent as far as possible	Obj	M.1035, § 8	YES
26. Desirable that transmission quality requirements from the upper layer to physical layers be common for all services	Obj	M.1035, § 8.1	YES
27. The link access control layer should as far as possible not contain radio transmission dependent functions	Obj	M.1035, § 8.3	YES
28. Traffic channels should offer a functionally equivalent capability to the ISDN B channels	Obj	M.1035, § 9.3.2	YES
29. Continually measure the radio link quality on forward and reverse channels	Obj	M.1035, § 11.1	YES
30. Facilitate the implementation and use of terminal battery saving techniques	Obj	M.1035, § 12.5	YES
31. Accommodate various types of traffic and traffic mixes	Obj	M.1036, § 1.10	YES
Application of IMT-2000 for fixed services and developing cour	ntries		
32. Repeaters for covering long distances between terminals and base stations, small rural exchanges with wireless trunks etc.	Req	M.819-1, Table 1	YES
33. Withstand rugged outdoor environment with wide temperature and humidity variations	Req	M.819-1, Table 1	YES
34. Provision of service to fixed users in either rural or urban areas	Obj	M.819-1, § 4.1	YES
35. Coverage for large cells (terrestrial)	Obj	M.819-1, § 7.2	YES
36. Support for higher encoding bit rates for remote areas	Obj	M.819-1, § 10.1	YES
Satellite component (Not required for RTT submission)		-	
37. Links between the terrestrial and the satellite control elements for handover and exchange of other information	Req	M.818-1, § 3.0	N/A
38. Take account for constraints for sharing frequency bands with other services (WARC-92)	Obj	M.818-1, § 4.0	N/A
39. Compatible multiple access schemes for terrestrial and satellite components	Obj	M.818-1, § 6.0	N/A
40. Service should be comparable quality to terrestrial component as far as possible	Obj	M.818-1, § 10.0	N/A
41. Use of satellites to serve large cells for fixed users	Obj	M.819-2, § 7.1	N/A
42. Key features (e.g. coverage, optimization, number of systems)	Obj	M.1167, § 6.1	N/A

IMT-2000 Item Description	Obj/Req	Source	Meets
43. Radio interface general considerations	Req	M.1167,	N/A
		§ 8.1.1	
44. Doppler effects	Req	M.1167,	N/A
		§ 8.1.2	

TABLE 3
Subjective Requirements and Objectives Relevant to the Evaluation of Candidate Radio Transmission Technologies

IMT-2000 Item Description	Obj/Req	Source	Meets
1. Fixed Service- Power consumption as low as possible for solar	Req	M.819-1.	YES
and other sources		Table 1	
2. Minimize number of radio interfaces and radio sub-system	Req	M.1034,	YES
complexity,		§ 12.2.1	
maximize commonality (M.1035, § 7.1)			
3. Minimize need for special interworking functions	Req	M.1034,	YES
		§ 12.2.4	
4. Minimum of frequency planning and inter-network coordination	Req	M.1034,	YES
and simple resource management under time-varying traffic		§ 12.2.6	
5. Support for traffic growth, phased functionality, new services or	Req	M.1034,	YES
technology evolution		§ 12.2.7	
6. Facilitate the use of appropriate diversity techniques avoiding	Req	M.1034,	YES
significant complexity if possible		§ 12.2.10	
7. Maximize operational flexibility	Req	M.1034,	YES
		§ 12.2.11	
8. Designed for acceptable technological risk and minimal impact	Req	M.1034,	YES
from faults		§ 12.2.12	
9. When several cell types are available, select the cell that is the	Obj	M.1034,	YES
most cost and capacity efficient		§ 10.3.3	
10. Minimize terminal costs, size and power consumption, where appropriate and consistent with other requirements	Obj	M.1036, § 1.12	YES

TABLE 4

Minimum Performance Capabilities

Test environments	Indoor Office	Outdoor to Indoor and Pedestrian	Vehicular
Mobility	mobility type	mobility type	mobility type
Considerations	(low)	(medium)	(high)
Handover	Yes	Yes	Yes
Support of general			
service capabilities			
Packet data	Yes	Yes	Yes
Asymmetric services	Yes	Yes	Yes
Multimedia	Yes	Yes	Yes
Variable bit rate	Yes	Yes	Yes

8.1 Compatibility with the existing IMT-2000 radio interfaces

The proposed updates are backward compatible with the existing IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces. The key RF parameters are not modified, and all features supported in the existing IMT-2000 CDMA DS and IMT-2000 CDMA TDD are still supported in the proposed update.

8.2 Harmonization within multiple proposals

Harmonization with multiple proposals has been done to the extent possible respecting the compatibility with the existing IMT-2000 radio interface.

"Other Considerations" (Section 9 in 8/LCCE/95)

9.1 Benefits of the proposed enhancement

The proposed enhancements improve the performance of IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces.

9.2 Harmonization and consensus building

All the radio interface specifications included in the proposed update were unanimously approved in 3GPP by all Organisational Partners (ARIB, ATIS, CCSA, ETSI, TTA, and TTC). The WP8F activity toward the consensus of ITU members will be facilitated by the evidence that many of the IMT-2000 technology updates and concepts used are actually shared with other standards development organisations.

9.3 Enhanced performance capabilities

The proposed update is fully in line with the ongoing activities on the vision for the enhancements of IMT-2000, also reflected in the Roadmap for the future updates of Rec. ITU-R M.1457.

ANNEX 6

Self-declaration that the proposed amendments are self-consistent between Section 5.1.1, Section 5.1.2, and the GCS, as well as between Section 5.3.1, Section 5.3.2, and the GCS

3GPP TSG RAN concludes that the proposed amendments are self-consistent between Sections 5.1.1, 5.1.2, and the GCS, as well as between Sections 5.3.1, 5.3.2, and the GCS.

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ANNEX 1*

Update of Sections 5.1.2 & 5.3.2

[See RP-040310 & RP-040312]

ANNEX 2

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Summary and Rationale of the proposed update

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ANNEX 5

^{*} As per established procedures, not all stakeholder SDOs need necessarily to transpose each document.

Self-evaluation of the proposed update against the evaluation criteria

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7.1 "The Evaluation Criteria" (Section 7.1 in 8/LCCE/95)

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IMT-2000 Item Description	Obj/Req	Source	Meets
Voice and data performance requirements			
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		§ 7.5	
2. For mobile videotelephony services, the IMT-2000 terrestrial	Req	Suppl.	YES
component should operate so that the maximum overall delay (as		F.720,	
defined in ITU-T Recommendation F.720) should not exceed 400 ms, with the one way delay of the transmission path not exceeding		F.723,	
150 ms		G.114	
3. Speech quality should be maintained during ≤3% frame	Req	G.174,	YES
erasures over any		§ 7.11 and	
10 second period. The speech quality criterion is a reduction of		M.1079	
≤0.5 mean opinion score unit (5 point scale) relative to the error- free condition		§ 7.3.1	
(G.726 at 32 kbit/s)			
4. DTMF signal reliable transport (for PSTN is typically less than one DTMF error signal in 10 ⁴)	Req	G.174, § 7.11 and	YES
one DTWI choi signal in 10)		M.1079	
		§ 7.3.1	
5. Voiceband data support including G3 facsimile	Req	M.1079	YES
		§ 7.2.2,	
6. Support packet switched data services as well as circuit	Req	M.1034	YES
switched data; requirements for data performance given in ITU-		§§ 10.8,	

IMT-2000 Item Description	Obj/Req	Source	Meets
TG.174		10.9	
Radio interfaces and subsystems, network related performance	requiremen	ts	
7. Network interworking with PSTN and ISDN in accordance with Q.1031 and Q.1032	Req	M.687-1. § 5.4	YES
8. Meet spectral efficiency and radio channel performance requirements of M.1079	Req	M.1034.§ 12.3.3/4	YES
9. Provide phased approach with data rates up to 2 Mbit/s in phase 1	Obj	M.687, § 1.1.14	YES
10.Maintain bearer channel bit-count integrity (e.g. synchronous data services and many encryption techniques)	Obj	M.1034,§ 10.12	YES
11. Support for different cell sizes, for example: Mega cell Radius~100-500 km Macro cell Radius ≤35km, Speed ≤500 km/h Micro cell Radius ≤1km, Speed ≤100 km/h	Obj	M.1035,§ 10.1	YES
Pico cell Radius ≤50m, Speed ≤10 km/h			
Application of IMT-2000 for fixed services and developing cour	ntries		
12. Circuit noise- idle noise levels in 99% of the time about 100pWp	Obj	M.819-1, § 10.3	YES
13. Error performance - as specified in ITU-R F.697	Obj	M.819-1, § 10.4	YES
14. Grade of service better than 1%	Obj	M.819-1, § 10.5	YES

TABLE 2

Generic Requirements and Objectives Relevant to the Evaluation of Candidate Radio Transmission Technologies

IMT-2000 Item Description	Obj/Req	Source	Meets
Radio interfaces and subsystems, network related perform	nance requi	rements	
1. Security comparable to that of PSTN/ISDN	Obj	M.687-1,	YES
		§ 4.4	
2. Support mobility, interactive and distribution services	Req	M.816,	YES
		§ 6	
3. Support UPT and maintain common presentation to users	Obj	M.816,	YES
		§ 4	
4. Voice quality comparable to the fixed network (applies to both	Req	M819-1,	YES
mobile and fixed service)		Table 1,	
		M.1079, § 7.1	
		8 7.1	
5. Support encryption and maintain encryption when roaming and during handover	Req	M.1034 § 11.3	YES
auring names (e)		3 11.3	

IMT-2000 Item Description	Obj/Req	Source	Meets
6. Network access indication similar to PSTN (e.g. dialtone)	Req	M.1034	YES
		§§ 11.5	
7. Meet safety requirements and legislation	Req	M.1034,	YES
		§ 11.6	
8. Meet appropriate EMC regulations	Req	M.1034,	YES
		§ 11.7	
9. Support multiple public/private/residential IMT-2000 operators	Req	M.1034,	YES
in the same locality		§ 12.1.2	
10. Support multiple mobile station types	Req	M.1034,	YES
		§ 12.1.4	
11. Support roaming between IMT-2000 operators and between	Req	M.1034,	YES
different IMT-2000 radio interfaces/environments		§ 12.2.2	
12. Support seamless handover between different IMT-2000	Req	M.1034,	YES
environments such that service quality is maintained and signaling		§ 12.2.3	
is minimized	_	27.102.1	******
13. Simultaneously support multiple cell sizes with flexible base location, support use of repeaters and umbrella cells as well as	Req	M.1034,	YES
deployment in low capacity areas		§ 12.2.5	
14. Support multiple operator coexistence in a geographic area	Req	M.1034,	YES
	•	§ 12.2.5	
15. Support different spectrum and flexible band sharing in	Req	M.1034,	YES
different countries including flexible spectrum sharing between	1	§ 12.2.8	
different IMT-2000 operators (see M.1036)			
16. Support mechanisms for minimizing power and interference between mobile and base stations	Req	M.1034,	YES
		§ 12.2.8.3	
17. Support various cell types dependent on environment	Req	M.1034,	YES
(M.1035 § 10.1)		§ 12.2.9	
18. High resistance to multipath effects	Req	M.1034,	YES
		§ 12.3.1	
19. Support appropriate vehicle speeds (as per § 7)	Req	M.1034.	YES
Note: applicable to both terrestrial and satellite proposals		§ 12.3.2	
20. Support possibility of equipment from different vendors	Req	M.1034,	YES
		§ 12.1.3	
21. Offer operational reliability at least as good as 2nd generation	Req	M.1034,	YES
mobile systems		§ 12.3.5	
22. Ability to use terminal to access services in more than one	Obj	M.1035,	YES
environment, desirable to access services from one terminal in all environments		§ 7.1	
23. End-to-end quality during handover comparable to fixed services	Obj	<i>M.1034-1</i> § 11.2.3.4	YES
24. Support multiple operator networks in a geographic area without requiring time synchronization	Obj		YES

IMT-2000 Item Description	Obj/Req	Source	Meets
25. Layer 3 contains functions such as call control, mobility management and radio resource management some of which are radio dependent. It is desirable to maintain layer 3 radio transmission independent as far as possible	Obj	M.1035, § 8	YES
26. Desirable that transmission quality requirements from the upper layer to physical layers be common for all services	Obj	M.1035, § 8.1	YES
27. The link access control layer should as far as possible not contain radio transmission dependent functions	Obj	M.1035, § 8.3	YES
28. Traffic channels should offer a functionally equivalent capability to the ISDN B channels	Obj	M.1035, § 9.3.2	YES
29. Continually measure the radio link quality on forward and reverse channels	Obj	M.1035, § 11.1	YES
30. Facilitate the implementation and use of terminal battery saving techniques	Obj	M.1035, § 12.5	YES
31. Accommodate various types of traffic and traffic mixes	Obj	M.1036, § 1.10	YES
Application of IMT-2000 for fixed services and developing cour	ntries	-1	
32. Repeaters for covering long distances between terminals and base stations, small rural exchanges with wireless trunks etc.	Req	M.819-1, Table 1	YES
33. Withstand rugged outdoor environment with wide temperature and humidity variations	Req	M.819-1, Table 1	YES
34. Provision of service to fixed users in either rural or urban areas	Obj	M.819-1, § 4.1	YES
35. Coverage for large cells (terrestrial)	Obj	M.819-1, § 7.2	YES
36. Support for higher encoding bit rates for remote areas	Obj	M.819-1, § 10.1	YES
Satellite component (Not required for RTT submission)		ı	
37. Links between the terrestrial and the satellite control elements for handover and exchange of other information	Req	M.818-1, § 3.0	N/A
38. Take account for constraints for sharing frequency bands with other services (WARC-92)	Obj	M.818-1, § 4.0	N/A
39. Compatible multiple access schemes for terrestrial and satellite components	Obj	M.818-1, § 6.0	N/A
40. Service should be comparable quality to terrestrial component as far as possible	Obj	M.818-1, § 10.0	N/A
41. Use of satellites to serve large cells for fixed users	Obj	M.819-2, § 7.1	N/A
42. Key features (e.g. coverage, optimization, number of systems)	Obj	M.1167, § 6.1	N/A

IMT-2000 Item Description	Obj/Req	Source	Meets
43. Radio interface general considerations	Req	M.1167,	N/A
		§ 8.1.1	
44. Doppler effects	Req	M.1167,	N/A
		§ 8.1.2	

TABLE 3
Subjective Requirements and Objectives Relevant to the Evaluation of Candidate Radio Transmission Technologies

IMT-2000 Item Description	Obj/Req	Source	Meets
1. Fixed Service- Power consumption as low as possible for solar	Req	M.819-1.	YES
and other sources		Table 1	
2. Minimize number of radio interfaces and radio sub-system	Req	M.1034,	YES
complexity,		§ 12.2.1	
maximize commonality (M.1035, § 7.1)			
3. Minimize need for special interworking functions	Req	M.1034,	YES
		§ 12.2.4	
4. Minimum of frequency planning and inter-network coordination	Req	M.1034,	YES
and simple resource management under time-varying traffic		§ 12.2.6	
5. Support for traffic growth, phased functionality, new services or	Req	M.1034,	YES
technology evolution		§ 12.2.7	
6. Facilitate the use of appropriate diversity techniques avoiding	Req	M.1034,	YES
significant complexity if possible		§ 12.2.10	
7. Maximize operational flexibility	Req	M.1034,	YES
		§ 12.2.11	
8. Designed for acceptable technological risk and minimal impact	Req	M.1034,	YES
from faults		§ 12.2.12	
9. When several cell types are available, select the cell that is the most cost and capacity efficient	Obj	M.1034,	YES
		§ 10.3.3	
10. Minimize terminal costs, size and power consumption, where appropriate and consistent with other requirements	Obj	M.1036, § 1.12	YES

TABLE 4

Minimum Performance Capabilities

Test environments	Indoor Office	Outdoor to Indoor and Pedestrian	Vehicular
Mobility	mobility type	mobility type	mobility type
Considerations	(low)	(medium)	(high)
Handover	Yes	Yes	Yes
Support of general service capabilities			
Packet data	Yes	Yes	Yes
Asymmetric services	Yes	Yes	Yes
Multimedia	Yes	Yes	Yes
Variable bit rate	Yes	Yes	Yes

8.1 Compatibility with the existing IMT-2000 radio interfaces

The proposed updates are backward compatible with the existing IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces. The key RF parameters are not modified, and all features supported in the existing IMT-2000 CDMA DS and IMT-2000 CDMA TDD are still supported in the proposed update.

8.2 Harmonization within multiple proposals

Harmonization with multiple proposals has been done to the extent possible respecting the compatibility with the existing IMT-2000 radio interface.

"Other Considerations" (Section 9 in 8/LCCE/95)

9.1 Benefits of the proposed enhancement

The proposed enhancements improve the performance of IMT-2000 CDMA DS and IMT-2000 CDMA TDD radio interfaces.

9.2 Harmonization and consensus building

All the radio interface specifications included in the proposed update were unanimously approved in 3GPP by all Organisational Partners (ARIB, ATIS, CCSA, ETSI, TTA, and TTC). The WP8F activity toward the consensus of ITU members will be facilitated by the evidence that many of the IMT-2000 technology updates and concepts used are actually shared with other standards development organisations.

9.3 Enhanced performance capabilities

The proposed update is fully in line with the ongoing activities on the vision for the enhancements of IMT-2000, also reflected in the Roadmap for the future updates of Rec. ITU-R M.1457.

ANNEX 6

Self-declaration that the proposed amendments are self-consistent between Section 5.1.1, Section 5.1.2, and the GCS, as well as between Section 5.3.1, Section 5.3.2, and the GCS

3GPP TSG RAN concludes that the proposed amendments are self-consistent between Sections 5.1.1, 5.1.2, and the GCS, as well as between Sections 5.3.1, 5.3.2, and the GCS.