Source: **Secretary**

Title: **Update Procedure for Revisions of Recommendation ITU-R M.1457**

Agenda item: **10**

Document for:

Decision	
Discussion	**X**
Information	

The attached correspondence was received from the ITU on 26 March.

Although the subject matter is predominantly one to be addressed by the Organizational Partners, a discussion within PCG may be useful to obtain the views of the relevant TSG Chairmen.

INTERNATIONAL TELECOMMUNICATION UNION

INTERNATIONAL MOBILE TELECOMMUNICATIONS 2000 (IMT-2000)

Revision 1 to Document IMT/1 26 March 2001

Project Manager, IMT-2000

UPDATE PROCEDURE FOR REVISIONS OF RECOMMENDATION ITU-R M.1457 (DETAILED SPECIFICATIONS OF THE RADIO INTERFACES OF IMT-2000)

1 The review of the Update Procedure

Recommendation ITU-R M.1457 containing detailed specifications of the radio interfaces of IMT-2000 (RSPC) will be updated in 2001 and it is foreseen that this revision will incorporate routine as well as significant changes.

The 4th meeting of ITU-R Working Party 8F (Rabat, 21-27 February 2001) has agreed on a more focused updated process for M.1457, including a roadmap for current work relevant to future updates of M.1457. The full text of the RSPC update procedures will be included in a forthcoming ITU-BR circular-letter; an advance copy of those procedures is being brought to your attention in Annex 1.

The Rabat meeting has also agreed on a timeline of M.1457 update and deliverables, which appears in Annex 2.

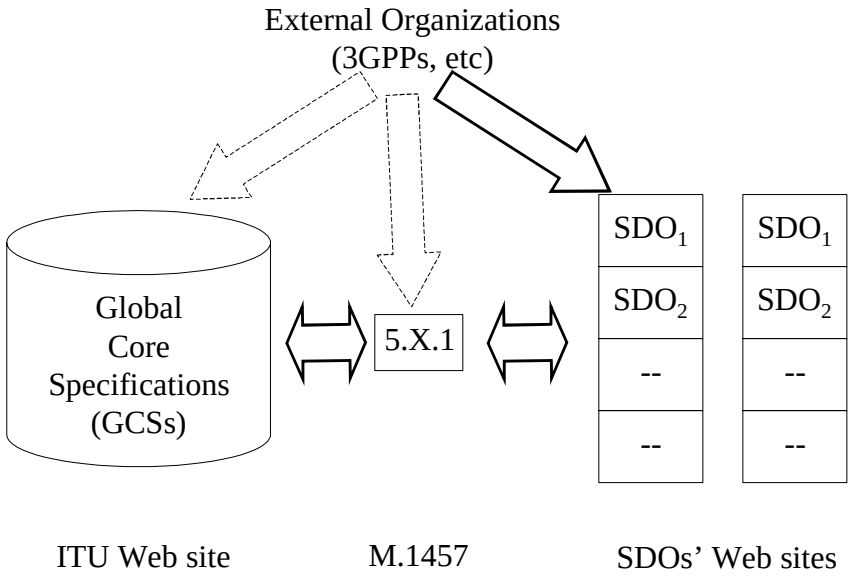

FIGURE 1

Global core specifications and corresponding (transposed) standards in Recommendation ITU-R M.1457

2 IMT-2000 Global Core Specifications (GCSs) and SDO Standards

The relationship between the GCSs for IMT-2000 radio interfaces and the corresponding standards are shown in Figure 1. The GCSs contained in the ITU website are indicated by hyperlinks at the beginning of each Section 5.x.2 of M.1457. Section 5.x.2 also contains hyperlinks to the SDO standards corresponding to a given GCS. The SDOs regularly transpose the jointly agreed specifications into published standards.

The agreement between the ITU and the SDOs in the development of RSPC represents a groundbreaking relationship and way forward in the rapid development of radio interface standards. This process has been running for approximately a year and WP 8F has requested the secretariat to undertake a quality review of these arrangements. Preliminary discussions on the RSPC updating process were carried out at a meeting held between ITU representatives and the Partnership Project SDO's in San Francisco, California on 13 November 2000.

On the basis of the agreed updating procedure for RSPC, the following aspects are highlighted regarding the collaborative arrangements between ITU-R and the SDOs:

The SDOs should formally certify to the ITU that their standards incorporated by reference into the revised and published Recommendation ITU-R M.1457 correspond to the set of specifications agreed by the SDOs to be transposed into standards.

The SDOs should also certify that their standards are consistent with the relevant Section 5.x.1 of Recommendation ITU-R M.1457 and the GCS as presented by WP 8F to SG 8. The process of transposition of those jointly agreed specifications into the SDOs standards, should maintain close consistency with the jointly agreed specifications.

The SDOs and other External Organizations participating in the collaborative activities with ITU regarding RSPC revisions are invited to inform the ITU on the aspects mentioned in the above paragraph in time to be reported to the 5th meeting of WP 8F (Stockholm, 27 June-3 July 2001).

Annexes: 2

ANNEX 1
(Source: Doc. 8F/TEMP/86)

Update Procedure for Revisions of Recommendation ITU-R M.1457 (Detailed specifications of the radio interfaces of IMT-2000)

1 Introduction

Five terrestrial radio interfaces are included in the existing Recommendation ITU-R M.1457, which were already approved to meet the IMT-2000 Requirements and Objectives and Minimum Performance Capability specified in the various ITU Recommendations (see Attachment 4 to Circular-Letter 8/LCCE/47, "Summary of IMT-2000 Requirements and Objectives and Compliance Template").

Working Party 8F has received contributions proposing updates to the terrestrial radio interfaces in Recommendation ITU-R M.1457. This document describes the procedure that will be used by WP 8F for the revisions.

Three cases are considered in Sections 3, 4 and 5 below:

– *Section 3:* Proposed changes to Section 5.x.2 only of Recommendation ITU-R M.1457.

– *Section 4:* Proposed changes to Sections 5.x.1 and 5.x.2 of Recommendation ITU-R M.1457.

– *Section 5:* Proposed new Sections 5.y.1 and 5.y.2 (y≥6) in Recommendation ITU-R M.1457.

2 Frequency of revisions to Recommendation ITU-R M.1457

A yearly update cycle for the formal revision of Recommendation ITU-R M.1457 is envisaged (i.e., ITU-R approval according to Resolution ITU-R 1). This represents a good compromise between the need to maintain market stability (e.g., avoid frequent changes that would lead to market confusion) and the need to promote the advancement of technology and service capabilities available to the user.

3 Proposed changes to Section 5.x.2 only of Recommendation ITU-R M.1457

In the case that a proposed update is only a revision or an addition of Standard Development Organization (SDO) standards in Section 5.x.2, without modification of the overview part (Section 5.x.1 "Summary and technical parameters of the radio interface") and within the scope of

the global core specification (GCS)[1] corresponding to that radio interface, the proponent must submit a document to WP 8F summarizing the changes, the rationale for those changes, and a self-declaration indicating that those changes are consistent with Section 5.x.1 and the GCS.

At each meeting of WP 8F, the Director, BR, is invited to provide a report of such proposed revisions he has received since the last meeting and WP 8F shall act on those proposals at each meeting.

The transposition process used during the development of the first version of Recommendation ITU-R M.1457 applies.

4 Proposed changes to Sections 5.x.1 and 5.x.2 of Recommendation ITU-R M.1457

In the case that a proposed update is a revision or an addition of SDO standards in Section 5.x.2 which require a modification of the overview part (Section 5.x.1) and/or to the global core specification, the following must be submitted to WP 8F:

1) the update of Section 5.x.2;

2) the proposed modification to Section 5.x.1, if applicable;

3) the modifications to the global core specification, if applicable;

4) a summary of the proposed update, including the rationale for the proposed update;

5) a self-evaluation of the proposed update against the evaluation criteria; and

6) a self-declaration that the proposed amendments are self-consistent between Section 5.x.1, Section 5.x.2 and the GCS.

This information may be submitted to WP 8F at any time and over more than one meeting; however, WP 8F will be unable to make a decision until all the required information is available. The transposition process used during the development of the first version of Recommendation ITU-R M.1457 applies.

5 Proposed new Sections 5.y.1 and 5.y.2 (y≥6) in Recommendation ITU-R M.1457

The proponent will indicate whether its submission is for a new section 5.Y.1, 5.Y.2.

However, it is the responsibility of WP 8F to determine whether a proposed submission will be considered for a new section in Rec. ITU-R M.1457.

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[1] The GCSs are the specifications provided to ITU by the External Organizations (EOs), upon which the SDOs standards are based. The GCSs contained in the ITU website are indicated by hyperlinks at the beginning of each Section 5.x.2 of Recommendation ITU-R M.1457. Section 5.x.2 also contains hyperlinks to the SDO standards corresponding to a given GCS. The SDOs regularly transpose the jointly agreed specifications into published standards. The SDOs should formally certify to the ITU that their standards incorporated by reference into the revised and published Recommendation ITU-R M.1457 correspond to the set of specifications agreed by the SDOs to be transposed into standards. The SDOs should also certify that their standards are consistent with the relevant Section 5.x.1 of Recommendation ITU-R M.1457 as presented by WP 8F to SG 8. The process of transposition of those jointly agreed specifications into the SDOs standards, should maintain close consistency with the jointly agreed specifications.

This case therefore covers the addition of a new radio interface (i.e., addition of Sections 5.y.1 and 5.y.2, for y≥6) to Recommendation ITU-R M.1457.

New radio technologies are always encouraged; however, they should be directed towards the enhancement of the existing IMT-2000 radio interfaces, rather than the creation of a new radio interface. This will support one of the ITU primary goals of minimizing the number of different radio interfaces and maximizing their commonality, while incorporating the best possible performance capabilities in the various IMT-2000 radio operating environments.

The transposition process used during the development of the first version of Recommendation ITU-R M.1457 applies.

6 Meeting cycle

The following meeting cycle (of WP 8F) will be used for the consideration of proposed new capabilities. The cycle applies independently for each proposal received. While valid proposals are expected to be completed in no more than three meetings; the 3 meeting cycle does not guarantee eventual inclusion in M.1457. Suppose a proposal is received at meeting "x", then the following would occur:

Meeting "x" - The proposal is presented and discussed with a view to understand what is being proposed. Those proposals which are of such nature that WP 8F agrees that they meet the criteria and can be agreed immediately are adopted at this meeting and those that require further evaluation are carried forward for consideration at the next meeting together with contributions from external evaluation groups as required. WP 8F will notify the proponent of the proposal, and other organizations as required, of issues that require further clarification or additional material that may be required to resolve outstanding issues, in the context of the evaluation criteria (see Sections 7 and 8) and other considerations (see Section 9).

Meeting "x+1" - The proposal is further discussed and evaluated; including the involvement of external evaluation groups as required. Those proposals for which WP 8F agrees that they meet the criteria can be adopted at this meeting and those which WP 8F considers require further evaluation are carried forward to the next meeting. WP 8F will notify the proponent of the proposal, and other organizations as required, of issues that require further clarification or additional material that may be required to resolve outstanding issues, in the context of the evaluation criteria (see Sections 7 and 8) and other considerations (see Section 9).

Meeting "x+2" - The evaluation is completed for the proposed update to Recommendation ITU-R M.1457, except for exceptional circumstances. If the proposal is for a new radio interface, additional consideration at subsequent meetings will likely be necessary for completing this evaluation. Those proposals for which WP 8F agrees that they meet the criteria are adopted at this meeting for the next revision of Recommendation ITU-R M.1457.

7 The evaluation criteria

Some of the criteria are measurable and may be numerically evaluated. However, other criteria, which are of a more subjective nature may be evaluated qualitatively.

7.1 Modification of the existing radio interfaces in Recommendation ITU-R M.1457

The evaluation for this update should be based on whether the Recommendation including update proposal meets the "Requirements and Objectives of IMT-2000" and "Minimum Performance Capabilities for IMT-2000" or not, as a "total" radio interface (refer to Attachment 4 and 6 of Circular Letter 8/LCCE/47). Since time has moved on since the evaluation of the original radio technology proposals, WP 8F may decide to develop new criteria for the performance capabilities and evaluation; until superseded the current quantitative values included in 8/LCCE/47 will be used (enhancements to the existing radio interfaces will be by definition compliant with these values). In addition, the technical impact on the other radio interfaces must be considered, taking into account the objective of convergence between radio interfaces. The proposals should be assessed based on consideration of evaluations and consensus building, recognizing the need to minimize the number of different radio interfaces and maximize their commonality, while incorporating the best possible performance capabilities in the various IMT-2000 radio operating environments. The evaluation should be done in the context of the "total" radio interface, as described in the current or proposed revision of Section 5.x.1. The evaluation expertise gathered during the initial evaluation of for the original radio interfaces may be utilized as required.

7.2 Addition of new radio interface (addition of 5.y.1 and 5.y.2, y≥6) to Recommendation ITU-R M.1457

The evaluation for this proposed update should follow a process similar to the one employed for the original evaluation and development of radio transmission technologies (Step 4 - 9 in Circular Letter 8/LCCE/47). However, the technical evaluation in Step 4 requires coordination between proponents of all radio interfaces in order to maximize their commonality. With reference to Step 6 WP 8F may decide to develop new criteria for the performance capabilities and evaluation. Until these new criteria are defined by WP 8F the current quantitative values included in 8/LCCE/47 will be used. Step 7 must require provision of opportunities for consensus building, grouping, etc, e.g. to ensure harmonious geographical co-existence. Recognizing the existing five radio interfaces, special consideration should be given to other less objective factors such as risk, migration, regulatory aspects, technology, timing and other market considerations (including technology stability) already included in Step 7. In addition the evaluation criteria and other considerations in Sections 7, 8 and 9 must be considered, particularly the need for harmonization with the existing IMT-2000 radio interfaces. The proposal must identify the added value (see Section 9) of having an additional radio interface.

8 Additional evaluation criteria

The following additional criteria should be used to complement those in "The Evaluation Criteria" in Section 7 above, as well as taking into consideration the overview of the existing IMT-2000 radio interfaces in Section 5.x.1 of Recommendation ITU-R M.1457.

8.1 Compatibility with the existing IMT-2000 radio interfaces

This would help determine whether the proposal would fit well with the existing IMT-2000 radio interfaces (as per Recommendation ITU-R M.1457). The issue of technical compatibility with the existing IMT-2000 radio interfaces is of importance to operators and needs to be explored in more detail. In general this would be assessed through the elements of Section 5.1 of Recommendation ITU-R M.1225. The emphasis should be on evolutionary capabilities as much as possible.

8.2 Harmonization within multiple proposals

In evaluating similar proposals WP 8F needs to develop a common view on the multiple proposals that are received in order to facilitate discussion on harmonisation between those proposals. Therefore information (even in a preliminary stage) from all the External Organizations involved should be made available, and receipt of that information should be considered a requirement by ITU-R WP 8F for taking any decision on any specific proposal. Any decision taken shall be done consistently with the timing in Section 6.

9 Other considerations

9.1 Benefits of the proposed enhancement

The proponent should show the added value of going ahead with the enhancement. Specifically, additional service capabilities (e.g., bit rate, multimedia), QoS, performance capabilities, and reduction in complexity should be explained.

The proponent may use the applicable items in the table in ANNEX 3 (Detailed evaluation procedure) in the Recommendation ITU-R M.1225 (Guidelines for Evaluation of Radio Transmission Technologies for IMT-2000), as required in the explanation.

9.2 Harmonization and consensus building

Consensus and harmonisation are of extreme importance.

The proponent should prove that harmonization and consensus building between the SDOs that are stakeholders of the proposed changes was achieved during the development of the proposal; WP 8F will continue this activity by means of consensus building amongst the ITU members as usual. This will ensure that the objectives of IMT-2000 in terms of high-degree of commonality and worldwide global roaming are achieved.

9.3 Enhanced performance capabilities

Consideration of the ongoing activities on the vision for the enhancement of IMT-2000, market trends, the results of the focus areas activities, etc., will be required. This will be based in part on radio technology focus areas established by WP 8F (see Section 10). The intention of the identification focus areas is to provide guidance to proponents of new or updated radio interfaces as they relate to technology areas that will enhance meeting the goals of IMT-2000.

10 Roadmap of planned enhancements

A road map of planned further enhancements will be maintained by WP 8F based on the input proposals with a clear indication of their status, including target dates for standardization. This will allow the development of a coherent WP 8F workplan for the ongoing development of IMT-2000, in order to facilitate the orderly enhancements of IMT-2000 capabilities (see the current version in Attachment 1).

Attachment : 1

ATTACHMENT 1 TO ANNEX 1
(Source: Doc. 8F/TEMP/85)

Roadmap for current work relevant to future updates of Recommendation ITU-R M.1457

Representatives of External Organizations (EOs) were invited to submit information to develop a road map of planned enhancements to their radio systems.

1 IMT-2000 CDMA-DS and IMT-2000 CDMA-TDD

The table below contains the title of the technical areas currently under investigation in 3GPP and a provisional target date for completion. The complete list, together with a short description of each technical area, can be found on the 3GPP web site www.3gpp.org.

Title	Provisional completion date
1.28 Mcps TDD option	March 2001
Base Station classification	March 2001
Hybrid ARQ II/III	September 2001
Node B Synchronization for TDD	March 2001
UTRA FDD repeater Specifications	March 2001
Terminal power saving features	March 2001
PS-Domain handover for real-time services	March 2001
RAB QoS Negotiation/Renegotiation over Iu	March 2001
RRM optimisation for Iur and Iub	March 2001
Radio Access Bearer support enhancements	March 2001
Improvement of inter-frequency and inter-system measurements	December 2001
Evolution of the transport in UTRAN	March 2001
Smart Antenna	March 2001
UE (User Equipment) positioning	March 2001
DSCH power control improvement in soft handover	March 2001
Radio link performance enhancements (feasibility study)	December 2001
High Speed downlink packet access (feasibility study)	March 2001
USTS (UL Synchronous Transmission Scheme) (feasibility study)	December 2001
Improved common DL channel for cell FACH state (feasibility study)	March 2001

2 IMT-2000 CDMA-MC

3GPP2 is currently evaluating proposals for 1X Evolved Data and Voice enhancement (1xEV-DV), which continues to enhance the cdma2000 family of specifications. A working group has been formed to perform the evaluation process and to develop a framework for 1xEV-DV with a target date of May 2001. Once the 1xEV-DV framework has been developed, 3GPP2 TSG-C will generate 3GPP2 specifications. Once the specifications are complete, 3GPP2 will deliver the specifications to the 3GPP2 SDOs to be transposed into standards. 3GPP2, in conjunction with the 3GPP2 SDOs, will also provide RSPC updates to the ITU-R WP 8F in accordance with the update process described in 8/LCCE/85+Corr.1. A target date of October 2001 has been proposed to 3GPP2 TSG-C for completion of the 3GPP2 specifications. This target date is currently being evaluated. 3GPP2 TSG-C will provide ITU-R WP 8F a more detailed work schedule when it becomes available.

3GPP2 has developed an evaluation process for 1xEV-DV. A stage 1 requirements document has also been developed and approved for 1xEV-DV. This requirements document includes the following key objectives:

- An improvement in the voice capacity and spectrum efficiency as compared to IMT-2000 CDMA MC 1X
- Integrated Voice and Data enhancement
- High-speed forward and reverse link packet data rate

3 IMT-2000 FDMA/TDMA

DECT Packet radio Service	June 2001
DECT/UMTS interworking	end of 2001
DECT access to IP-networks	end of 2001
Broadband DECT (10 Mbit/s)	beginning 2002

4 IMT-2000 TDMA-SC

Work item	**Provisional completion date**
Enhanced or hybrid access technologies	October/December 2001
Real-time IP-based Services	October/December 2001
Continuing Enhancements to QoS	October/December 2001
Improved User Throughput	October/December 2001
Enhanced UE positioning	October 2001
Enhanced Subscriber Authentication and encryption	October 2001
R-UIM application enhancements	October 2001

5 Focus areas for future studies

Based on input contributions, a key area for 2001 will be the development of fast packet access modes. WP 8F should consider setting expected performance requirements (e.g., for fast packet access) and criteria which will lead to continued harmonization and convergence among the IMT-2000 radio interfaces (e.g., refer to Document 8F/123).

It should be noted that at the 2nd meeting of WP 8F (San Diego, 21-25 August 2000), the following sentence on "Focus Areas" was agreed and was subsequently included in ITU-BR Circular-Letter 8/LCCE/82, *"Focus areas could perhaps be techniques to improve spectrum efficiency, increased data rates, changes to the radio interfaces to improve packet and/or IP based services and applications"*.

ANNEX 2
(Source: Doc. 8F/TEMP/88)

TIMELINE OF M.1457 UPDATE AND DELIVERABLES

WP 8F Oct 00	**WP 8F Feb 01**	**WP 8F June 01**	**WP 8F Oct 01**	**SG 8 Nov 01**	**ITU-R BR April 1, 02**
INPUTS	**INPUTS**	**INPUTS**	**INPUTS**	**INPUTS**	**INPUTS**
	Best and Final Submission TDMA SC (8F/209)			Revision 1 M.1457	ITU-R BR provided with transposed material for incorporation into sections 5.X.2 See Note 2
	Initial Submission FDMA/TDMA (8F/221)	Update Submission FDMA/TDMA	Best and Final Submission FDMA/TDMA		Reference links for 5.X.2 tables
	Best and Final Submission CDMA MC (including DO) (8F/193)	Update Submission CDMA MC – DO See Note 1			
	Planning Information CDMA MC –DV (8F/193 Annex 7, 8F/239, CL85 Section 2 of Annex), 8F/254 Annex 1 section 3.4)	Initial Submission CDMA MC – DV See Note 1	Best and Final Submission CDMA MC – DV See Note 1		
	Planning Information CDMA DS – HSDPA (8F/211 Annex 2)	Initial Submission CDMA DS – HSDPA See Note 1	Best and Final Submission CDMA DS – HSDPA See Note 1		
	Initial submission of CDMA DS & CDMA TDD (8F/231) as well as planning information on other aspects for CDMA DS and CDMA TDD (8F/211 Annex 1,3,4,5,6) & CL85 Section 1 of Annex	Update submission of CDMA TDD and on other aspects for CDMA DS	Best and Final Submission of CDMA TDD and on other aspects for CDMA DS		

WP 8F Oct 00	WP 8F Feb 01	WP 8F June 01	WP 8F Oct 01	SG 8 Nov 01	ITU-R BR April 1, 02
OUTCOMES	**OUTCOMES**	**OUTCOMES**	**OUTCOMES**	**OUTCOMES**	**OUTCOMES**
CL 85 Suggested Process	CL 85 Revised Approved Process		**COMPLETION OF ALL 5.X.1 SECTIONS**		**COMPLETION OF ALL 5.X.2 SECTIONS**
	Complete and Approve 5.4.1 TDMA -SC of Revision 1 Update to M.1457	**Complete and Approve 5.2.1 CDMA MC-*DO* of Revision 1 Update to M.1457**	**Complete and Approve 5.2.1 CDMA MC-*DV* of Revision 1 Update to M.1457**	**Approval for Adoption of Revision 1 M.1457**	**Completion of 5.X.2 of Revision 1 of M.1457**
		x	**Complete and Approve 5.1.1 CDMA DS-HSDPA + CDMA DS Other Aspects + 5.3.1 CDMA TDD of Revision 1 Update to M.1457**		**Rev 1 M.1457 in ITU process for approval by correspondence**
			Complete and Approve 5.5.1 FDMA/TDMA of Revision 1 Update to M.1457		
			Complete Entirety of Revision 1 Update to M.1457 for submission to SG 8		

Notes:

0) - **Planning Information** is considered to be an initial perspective on the enhancement to be considered for Rev.1 M.1457;

- **Initial Submission** is additional detailed information on the enhancement to be considered for Rev.1 M.1457;

- **Best and Final Submission** is the proposed final text for 5.X.1 received from the relevant external organisations of the enhancement to be included in Rev M.1457.

1) Input to WP 8F received from the relevant external organisations of adjustments to CDMA MC – DO, CDMA MC – DV, and CDMA DS – HSDPA, as a result of further development and potential harmonization among DO, DV and HSDPA.

2) In accordance with procedures previously in place for first initial release of M.1457, the Standards Development Organizations complete the transposition, where appropriate, public enquiry and publication by April 1, 2002.

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