

Source: TSG-N vice chairman (ITU-T SG11 Q.23 rapporteur)¹
Title: Cooperation with ITU-T
Document for: Discussion
Agenda Item: 7.3

1. Introduction

This contribution discusses how 3GPP should produce a cohesive standard in cooperation with ITU-T.

2. A result of the recent ITU-T SG11 meetings

ITU-T SG11 held a joint expert meeting with ITU-R TG8/1 in Beijing on 10th, June, 1999 and a rapporteur's meeting in Cheju during 14th – 25th, June, 1999.

Through this meeting, it was agreed that ITU would take the "recommendation by reference" approach based on the 3GPPs and SDOs specifications for the IMT-2000 radio interface recommendations. (See the JEM meeting report attached.)

ITU-T SG11 is now expecting 3GPPs and SDOs to submit contributions on radio technology independent portions of Layers 2 and 3 with technical substance (even if in a preliminary stage) to SG11 also before 1 September 1999.

3. How to deal with the expectation from ITU-T SG11

The most appropriate group to discuss this issue and create such contributions is TSG-CN WG1.

The issues to be discussed in TSG-S plenary are:

- (1) Should 3GPP submit the information on its draft specification? Or should each SDO submit the information on 3GPP draft specification?
- (2) When 3GPP submit such information, should 3GPP be a source of the contribution? Or should any member companies be the source on behalf of 3GPP according to the current rule of 3GPP?

4. Further areas to be taken "recommendations by reference"

ITU-R TG8/1 asked ITU-T to take the "recommendation by reference" approach for the entire IMT-2000 standardization area in ITU-T (See the liaison from TG8/1 to SG11).

ITU-T SG11 is a leading SG on IMT-2000 standardization in ITU-T. ITU-T SG11 has just started how ITU-T can take such approach for entire IMT-2000 recommendation. Although this is unofficial information, SG11 chairman is expecting to discuss this issue at the next **GSC** meeting which will be held in US at the end of August.

3GPP should prepare for its position by such opportunity to discuss with SG11 how a cohesive set of IMT-2000 standard among ITU, 3GPP and SDO.

Issues to be discussed in TSG-S are:

- (1) Does 3GPP support to take "recommendations by reference" for entire IMT-2000 recommendations in ITU-T?
- (2) How 3GPP should deliver its position to ITU-T?

5. Conclusion

This contribution raised some issues related to "recommendations by reference"

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approach in ITU-T. It is expected that these issues can be solved in TSG-S plenary and approved by PCG.



Chairman, JEM

**REPORT ON THE JOINT EXPERTS MEETING OF
ITU-R TG 8/1 AND ITU-T SG 11**

1 Introduction

Joint Experts Meeting of ITU-R Task Group 8/1 and ITU-T Study Group 11 was held on 10th June 1999 in Beijing, China, during the 17th Meeting of ITU-R TG 8/1 on 31 May - 11 June 1999 in Beijing, China, thanks to the kind invitation from the Chinese Administration. The meeting was co-chaired by Mr. Michael Callendar, Chairman of ITU-R TG 8/1 and Mr. Sadahiko Kano, Chairman of ITU-T SG 11, assisted by Mr. Raj Pandya, Chairman of ITU-T WP 3/11 and Mr. Fabio Leite, Counsellor of ITU-R.

The list of documents are found in Appendix 1.

In accordance with the agreed agenda, after an initial plenary meeting in the morning, the following two Ad-hoc Group Meetings were held:

Ad-hoc Group 1: Q.FSR-L2 (Draft Recommendation Q.1731.2 - Functional Specifications and Requirements for IMT-2000 Layer-2 Radio Interface)

Co-Chairs: Mr. Val Oprescu (ITU-T SG 11 JQG 1 Co-Issue Manager, Motorola)
Mr. Pietro Schicker (As above, SwissCom)

Ad-hoc Group 2: Work plan

Co-Chairmen: Mr. Raj Pandya (ITU-T WP 3/11 Chair, Program Manager of ITU-T IMT-2000 activities)
Mr. Sabah Towajj (ITU-R IMT-2000, Program Manager)

2 Major achievements of the plenary meeting

2.1 Common understanding of the environment in which 2 Groups (ITU-R TG 8/1 and ITU-T SG 11) are operating

The ITU-T SG 11 participants of the JEM noted that:

- 1) The Operators Harmonization Group (OHG) sent a liaison statement to the 17th meeting of ITU-R TG 8/1, containing "Harmonized Global 3G (G3G) Technical Framework for ITU IMT-2000 CDMA Proposal" (JEM/33, Document 8-1/419);
- 2) ITU-R TG 8/1 endorsed its support for all the recommendations contained in the liaison (JEM/38, Document 8-1/TEMP/217).
- 3) Of particular importance to SG 11 are the following points, which were supported in principle by the participants of SG 11 at this meeting:
 - a. Modular 3G Harmonization Proposal (cf. Figure 2 in the annex of Doc. JEM/33, 8-1/419), where:
 - Three modules are identified as "Radio Access Family of 3G CDMA Modes"; (FDD Mode†1: Direct Sequence, FDD mode 2: Multi-Carrier, and TDD Mode);
 - Two modules are identified as "Core Network Family of 3G Systems" (Evolved GSM MAP and Evolved ANSI-41); and
 - One module is identified as "Core Network 3G Inter Family Roaming", which links the two core network modules.
 - The embodiment of these modules is presented in Fig. 3 of the annex of Doc. JEM/33, 8-1/419.
 - b. IMT-2000 global roaming is assumed to be realized, at least during the initial phase of IMT-2000 implementation, by dual mode mobile terminals, which are "bi-lingual" in terms of both radio technology options and core network protocol options (Evolved GSM MAP and Evolved ANSI-41).
 - c. Some experts proposed that a mechanism should be provided for mobile terminals to recognize the environment in which they happen to operate and to select an appropriate radio option and a network protocol option accordingly. For some experts, this was a new piece of information, which ★ SG 11 has to consider in fulfilling its mission to provide a protocol mechanism to realize IMT-2000 global roaming. (See also JEC/36, Document 8-1/TEMP/199(Rev.1).
 - d. If such a protocol mechanism as above is provided by SG 11, the detailed protocols for accessing two core network modules (i.e. Evolved GSM MAP core network and Evolved ANSI-41 core network) could be contained in SG 11's Recommendations by making a reference to appropriate SDO and Partnership Project specifications.

2.2 Presentations of SG11's Layer 2 work and overall IMT-2000 work

Mr. Val Oprescu (SG 11 JQG1 Co-Issue Manager, Motorola) made an excellent presentation on the background and history of the Layer 2 work in SG 11, referring to draft Q.FSR-L2. (JEM/3 and Document 8-1/INFO/43). Mr. Raj Pandya (WP 3/11 Chair, Program Manager of ITU-T IMT-2000 activities) also made an excellent presentation on the overall IMT-2000 work at ITU-T SGs. These two presentations were appreciated by all the participants, in particular, those of TG 8/1.

2.3 Presentation of TG 8/1 progress

An overview of progress in TG 8/1 was given to the meeting by members of the leadership of TG†8/1.

3 Report of Ad-hoc Group 1 (Q.FSR-L2)

See Annex 1.

4 Report of Ad-hoc Group 2 (Work plan)**Status of Radio Related Studies in SG 11 and TG 8/1**

The input contributions were reviewed and discussed. They provided an overview of the direction and process for incorporating radio specifications from appropriate SDOs and Partnership Projects.

Many of the decisions and suggestions regarding the completion of the IMT-2000 specifications to meet the industry requirements were addressed in the liaison statement from TG 8/1 to SG 11

Views were expressed that the RSPC Recommendations from TG 8/1 will contain detailed and complete radio specifications for the radio technologies, which will include layers 1, 2, and 3 (RRM) aspects. SG 11 intends to assess the technical substance of radio technology independent portions of Layers 2 and 3 specifications which would be referenced by ITU Recommendations. Therefore, SDOs and

Partnership Projects are asked to submit their contributions with technical substance (even if in a preliminary stage) to SG 11 also before 1 September 1999*

Accordingly, the high level division of work on IMT-2000 radio interface signalling between ITU-T WP 3/11 and ITU-R TG 8/1 was revised to reflect the agreement reached during this meeting and is provided in Annex 1.

Consolidated Workplan on IMT-20000

The consolidated ITU-R/ITU-T consolidated workplan is provided in Annex 2.

The JEM noted that a number of different approaches to security were being followed in the SDOs and Partnership Projects. These parties are requested to urgently coordinate their approaches to security for IMT-2000 with the ITU.**

5 Conclusion

Although the time allocated to the meeting was short, the meeting was a great success in aligning the views on Layer 2 as well as the future work plan to meet the market needs as expressed by the liaison statement from OHG.

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TABLE

Preliminary consolidated work plan for IMT-2000 studies in the ITU-T

| Group | Document | Title | Scope | Target Determination |
|--------------|-----------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <u>SG 11</u> | | | | |
| Q.8/11 | Q.1701 | Framework for IMT-2000 Networks | Defines the IMT-2000 Family of Systems concept, identifies interfaces for standardization by ITU, and provides IMT-2000 CS1 capabilities | 05/1998 (Decision 03/99) |
| | Q.1711 | Functional Network Architecture for IMT-2000 | Identifies network and terminal functions and relationships between them to support IMT-2000 CS1 services and network capabilities per Q.1701 | 05/1998 (Decision 03/99) |
| | Q.1721 | Information Flows for IMT-2000 | Defines the Stage 2 information flows for IMT-2000 CS1 services and network capabilities per Q.1701 | 12/1999 |
| Q.23/11 | Q.1731-2 | Functional specifications and requirements for IMT-2000 Layer 2 radio interface | Defines radio-independent requirements and functions for Layer 2 of the IMT-2000 radio interface | 12/1999 |
| | Q.1731-GA | Functional specifications and requirements for IMT-2000 radio interface - General Aspects | Addresses general aspects and high-level protocol architecture for IMT-2000 radio interface | Note 1 |

| Group | Document | Title | Scope | Target Determination |
|----------|------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| | Q.1731-3 | Functional specifications and requirements for IMT-2000 radio interface - Layer 3 | Provides Layer 3 common functional requirements for the IMT-2000 radio interface | Note 1 |
| | Q.1741 | Functional specifications and requirements for IMT-2000 UIM (User Identity Module) | Defines requirements for the design of the IMT-2000 UIM and the UIM-MT interface | 12/1999 |
| Q.24/11 | Q.1751 | Functional Requirements for the IMT-2000 network-to-network interface | Identifies common functional requirements for the IMT-2000 network-network interface | Note 1 |
| JQG1* | Q.L2P | Layer 2 protocol for the radio interface | Layer 2 protocol for IMT-2000 radio interface | 4Q/2000 |
| JQG3 | Tech. Rep. | | Identify INAP requirements and enhancements for IMT-2000 service control | 12/1999 |
| JQG4 | Tech. Rep. | | Identify requirements and broad protocol choices for IMT-2000 mobility management | 12/1999 |
| JQG4 (?) | Q.IMM | | IMT-2000 mobility management protocols | 4Q/2000 |
| JQG5 | Tech. Rep. | | Identify requirements and enhancements on existing call & bearer control protocols. Protocol selection for IMT-2000 call & bearer control | 12/1999 |

| Group | Document | Title | Scope | Target Determination |
|-------------|----------------|-----------------------------------|----------------------------------------------------------------------|----------------------|
| JQG6 | Tech. Rep. | | IMT-2000 management requirements (high level) | 4Q/1999 |
| JQG7 | Tech. Rep. | | IMT-2000 security requirements and protocols | TBD |
| WP 1/11 | Q.ICC | | IMT-2000 call/connection control protocols | 4Q/2000 |
| | Q.2630.1 | AAL2 Signalling for CS-1 | AAL2 signalling protocols | 03/1999 |
| WP 4/11 | Q.ISC | | IMT-2000 service control protocols | 4Q/2000 |
| <u>SG 2</u> | F.116 | IMT-2000 service features | Provides descriptions for IMT-2000 service features and capabilities | 05/1999 |
| <u>SG 3</u> | | | IMT-2000 charging and accounting principles | |
| SG 4 | M.3210.0 | Management framework for IMT-2000 | | TBD |
| | M.3210. imtsp | Service provisioning for IMT-2000 | | TBD |
| | M.3210. sec | Security management for IMT-2000 | | TBD |
| | M.3210. imtchg | Charging and billing for IMT-2000 | | TBD |

| Group | Document | Title | Scope | Target Determination |
|-------|----------|----------------------------------------------------------------------|-------|----------------------|
| SG 12 | P.313 | Transmission characteristics for cordless & mobile digital terminals | | 09/1999 |
| SG 13 | I.5imt | Interworking of IMT-2000 with other networks | | xx/2000 |
| | I.35z | Framework for mobile performance | | xx/2000 |
| SG 16 | H.223 | Multiplexing protocol for lbr multimedia conn. | | 03/96 |
| | H.245 | Control protocols for multimedia conn. | | |
| | H.323 | Pkt-based multimedia conn. systems | | 02/98 |
| | H.324 | Terminals for lbr multimedia conn. | | 02/98 |

NOTE 1 ñ The scope and need for these documents are currently under discussion in WP 3/11. JQG = Joint Question Groups created by SG 11 to bring together IMT-2000 requirements and protocol experts in order to facilitate protocol and interface definition work. Currently there are a number of JQGs that are operational including:

JQG1 (IMT-2000 Radio Interface Layer 2)

JQG3 (IMT-2000 Service Applications)

JQG4 (IMT-2000 Mobility Management)

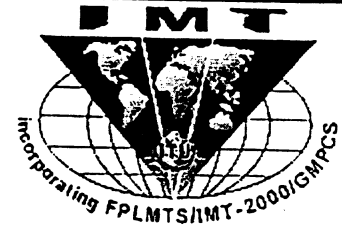
JQG5 (IMT-2000 Call & Bearer Control)

JQG6 (IMT-2000 Management) – co-sponsored by SG 11 and SG 4

JQG7 (IMT-2000 Security) ñ co-sponsored by SG 11 and SG 7 (subject to approval by SG 7 at its June 1999 meeting).



Joint Experts Meeting of ITU-R Task Group 8/1 and ITU-T Study Group 11
Beijing, 10 June 1999



Task Group 8/1

LIAISON STATEMENT TO ITU-T WP3/11

The ITU has played a critical role in the development of wireless communication standards that is responsive to the needs of the end users and operators. To meet the timely needs of the end users and provide complete system specifications in the timeframe noted in ITU-R Circular Letter 8/LCCE/47, TG8/1 must define and rigorously follow the most efficient process possible in the development of the Radio Interface Technology Specifications (RSPC).

In order to complete the work on time, the development process and schedule of IMT.RSPC is being defined to include the use of references to material developed by bodies external to the ITU rather than incorporating large amounts of material from those organizations. (See Addendum 1 of Section 12, Attachment 18, Document 8-1/350). In addition, TG8/1 will adopt the structure of the detailed specifications coming from external Standards Development Organizations (SDOs) and 3rd Generation Partnership Projects (3GPPs) and will not attempt to unilaterally edit this material.

We note that ITU-T has defined processes for incorporation of references in ITU recommendations in documents:

- ITU-T Recommendation A.5: Generic procedures for including references to documents of other organisations in ITU-T Recommendations.
- ITU-T Recommendation A.6: Co-operation and exchange of information between ITU-T and national and regional standards development organisations.

These documents provide guidance for ITU-T recommendations and it is assumed that the ITU-R will follow a similar policy.

TG 8/1 noted that ITU-T SG11 has already adopted this external reference method e.g. by making a reference in your Recommendations to specifications of the ATM-Forum, ETSI and IEEE and that you also intend to do so to those of the IETF.

In order to ensure the objective of worldwide interoperability of equipment and to facilitate global roaming it is necessary for the ITU-T to publish the specifications for layer 2 LAC and layer 3 aspects of the radio interface. TG 8/1 suggests that WP3/11 adopt the same approach as TG 8/1, that being to utilize references to external documents in developing its IMT-2000 Recommendations, wherever you judge appropriate based on contributions submitted to your meetings. An additional benefit of using of external references is to ensure that the ITU is being seen to manage the

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complete worldwide standards development process for third generation mobile systems. Specifically, TG 8/1 proposes that WP3/11 develop a document similar to IMT.RSPC for the Layer 2 LAC and Layer 3 specifications by referencing the work completed by the various organizations external to the ITU to define, characterize and define those areas of the technologies.

Since the ITU Study Groups can operate only on the basis of contributions submitted to their meetings, it is the intention of TG 8/1 to encourage its participants to talk to WP3/11 participants in the same organization or country, so that the latter would submit contributions which would lead to the same direction as stated here.

It is the understanding of TG 8/1 that IMT-2000 global roaming would be realised at least during the initial phase of IMT-2000 implementation by dual mode (or multiple mode) mobile terminals, which would have capabilities:

- a) to recognise the radio environment in which it operates (perhaps through the use of a logical control channel) and select the appropriate mode to operate in that environment, and
- b) to recognise the core network protocol environment in which it operates and select an appropriate mode in that environment. With regard to core network protocols, two family members are anticipated in the initial phase of IMT-2000 implementation, namely GSM-evolved core network protocols and ANSI-41-evolved core network protocols.

If dual (multiple) mode mobile terminals would be able to support options in both radio and network protocols as stated above, it would eliminate the need for GSM-evolved core networks to also support the ANSI-41 evolved protocols and vice versa in order to realise the global roaming. This will facilitate SG11 - in the opinion of Dr. Kano, SG11 chair - to proceed quickly to prepare radio layer 2 LAC and Layer 3 specifications that will enable global roaming. Namely, SG11 needs to provide the framework as stated above, define a protocol to recognise and select a network protocol, as these may very likely not be handled by individual 3GPPs. As for detailed protocols, a reference to appropriate specifications of 3GPPs should suffice.

Proposal

1. It is suggested that the ITU-T recognise the large amount of work being undertaken by the 3GPPs and the SDOs, and develop synergistic program plans for utilising the work completed by these organisations. A possible way of achieving this synergism could be by the use of references, as you have already been doing with other SDOs, forums and consortia.
2. TG 8/1 proposes that WP3/11 develop a document similar to IMT.RSPC for the Layer 2 LAC and Layer 3 specifications by providing an overview section and possibly an appropriate protocol mechanism to recognise and select a protocol in a mobile terminal, and for detailed specific protocols by referencing the work completed by the various organisations external to the ITU.

TG 8/1 offers these views, that references be considered for use in ITU-T documents on the initial phase of IMT-2000, because TG 8/1 believes that it is the best mechanism for achieving its goals of the IMT-2000 standardisation in a timely fashion.

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