Source: **TTA**

Title: **Current Status on IMT-2000 in Korea**

Agenda item: **10.5**

Document for:

Decision	
Discussion	x
Information	x

1. Decision/action requested

Not required.

2. References

ITU-R Doc. 8-1/INFO/15(1997.Feb.), 12th TG8/1 Cheju Meeting distributed.

3. Rationale

- Information on the current R&D and Standardization activities in Korea
- After Family Concept and/or Set of SRTTs, will the IMT-2000 standard diverse?

4. Issues for discussion

Identification or understanding the bar over the worldwide common standard in radio aspects.

1. Introduction

In this paper, the current status of IMT-2000 standardization activities in Korea will be provide to give the information and one issue has been raised in order to consider. This paper consists of two parts. One is for information and the other is for considering.

In the information part, R&D activities in Korea and the standardization activities are included.

In the second part, TTA would like to consider on a certain action initiated by GSC/RAST that may facilitate to make a worldwide common standard for IMT-2000. Whatever a certain action would be, GSC/RAST meeting is good chance to make a brainstorming to identify or to understand what factors are the most serious bars over the worldwide common standard for IMT-2000 in radio aspects.

2. Current Information on IMT-2000 Activities in Korea

2.1 R&D Activities

Full-scale R&D activities on the IMT-2000 in Korea have launched from late 1996. Before that the most manufacturer and network operators had focused on their efforts on the implementation of the digital cellular system CDMA in 800MHz and PCS in 1.7/1.8 GHz.

However some network operators and manufacturer had stepped in the research for the basic study on the IMT-2000 from the late-1995. Though the timing of the late-1995 could not be compared to that of R&D activities in Japan and in Europe, they certainly recognized the technologies for the higher data rate service should be developed and will be implemented in the near future.

Nowadays there are two kinds of consortium in Korea. The first consortium launched from late 1996 consisted of more than 90 companies including foreign companies. After the launching of the R&D consortium, the main research organization of consortium, ETRI, has been devoted to the system architecture for the IMT-2000 and major manufacturer has been devoted to develop the key technologies for IMT-2000.

During the R&D by the first consortium, some network operators and manufacturers that could see that there would be two or more standards for the IMT-2000 in the world suggested establishing another consortium to develop the different system from ETRI. ETRI had been developing the system based on the IS-95 system.

Therefore second consortium established in the 1997 is developing the system based on the asynchronous wide band CDMA being similar to the ARIB system and ETSI SMG α concept. However in the 2nd consortium the main R&D activities are being carried by manufacturer, network operators and ETRI. In other words, ETRI is involved

in two consortiums.

The organization of each consortium is shown in Fig.1 and Fig.2.

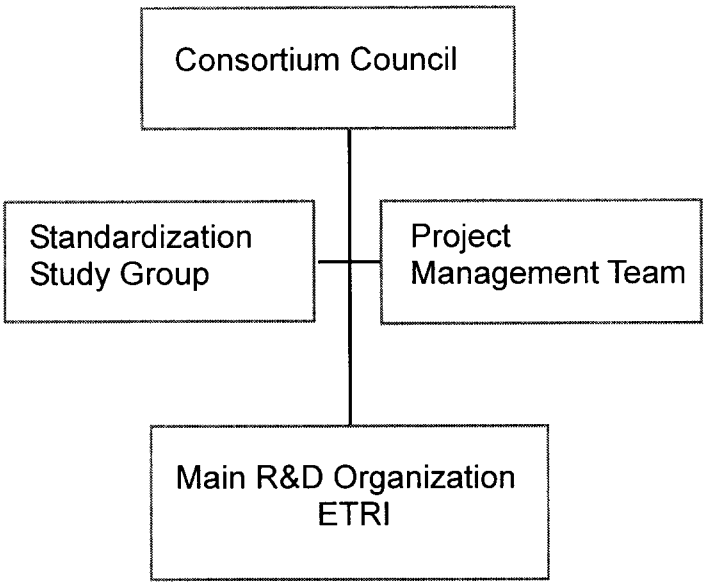

Figure 1. R&D CONSORTIUM 1(SYNCHRONOUS W-CDMA)

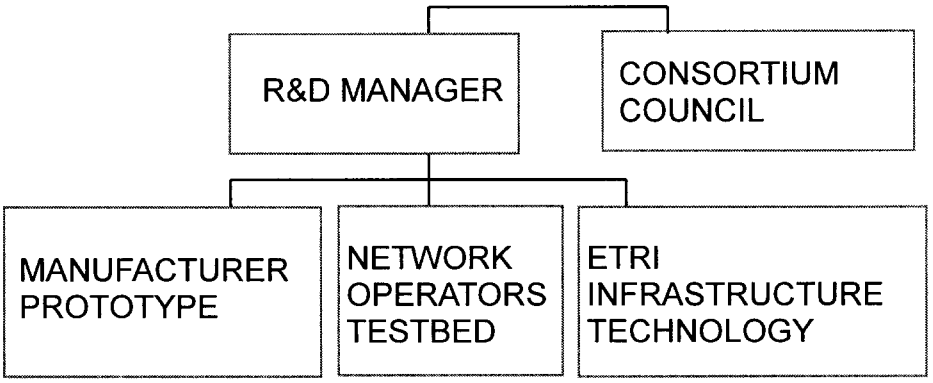

Fig.2 R&D CONSORTIUM 2(ASYNCHRONOUS W-CDMA)

In the Figure 1, the standard study group (SSG) was launched from Jan. 1998 in order to discuss on the IMT-2000 standard in Korea including service feature and will produce a Korea vision document on IMT-2000 which will be submitted to the consortium council and some appropriate organization including the government and

TTA. The structure of SSG is shown in figure 3.

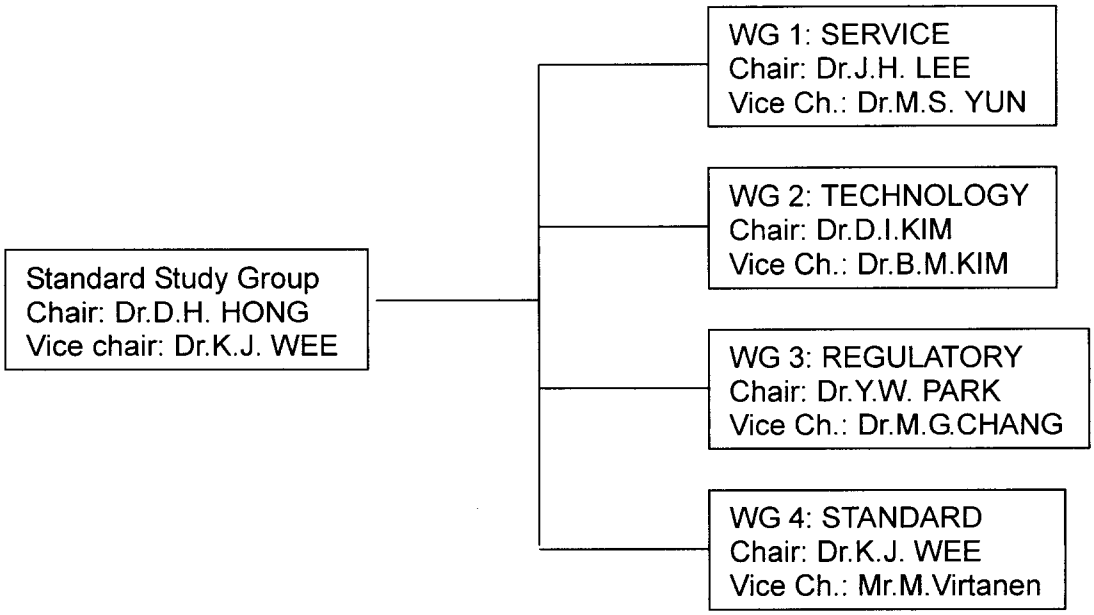

Fig. 3 Organization of Standard Study Group

2.2 Standardization Activities.

The Technical Assembly of TTA, the telecommunication standardization body in Korea, has re-organized its subcommittee structure in order for new subcommittee to carry the standardization activities on the IMT-2000 in June, 1997. New Sub-committee 7 installed in the Technical Assembly has taking the all IMT-2000 standards both on the radio and network aspects. (see Fig. 4)

Though the R&D activities started in late 1996, TTA has initiated to host ITU-R TG8/1 meeting in Korea and as a consequential action ETRI has hosted the 12th TG8/1 meting in Cheju, Korea in Feb. 1997.

According to the agreement of the 4th Korea-Japan Cooperation Meeting on the Mobile Telecommunications in 1997, 'the standardization meeting on the IMT-2000' has set up between TTA and TTC/ARIB in order to cooperate and to try to make the common standard for the submission to ITU. Through 3 times of meeting TTA-ARIB has identified the differences between each proposal and agreed with the mutual participation to the other party's meeting. On the 3rd meeting ARIB has submitted ARIB's system description (version 0-4.0) to the meeting and TTA will submit TTA Proposal 2 system description(version 0.0) to the 4th meeting being held in 6th – 7th in April, 1998.

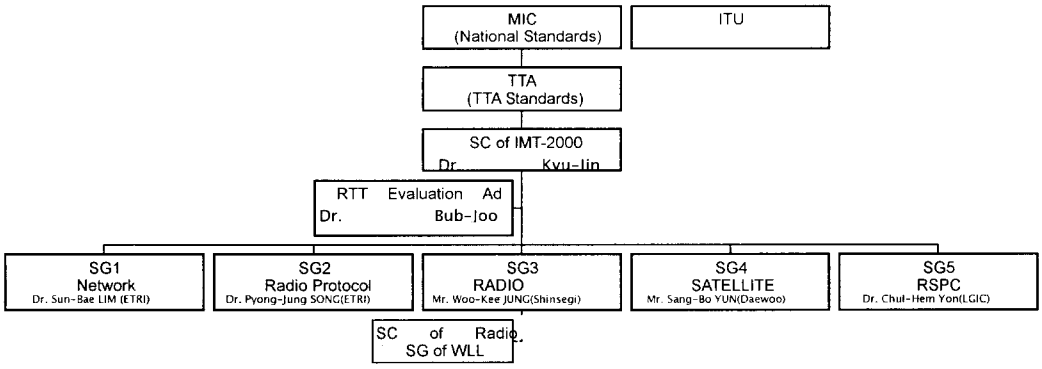

Fig. 4 TTA Structure

Furthermore, during the multilateral standardization bodies meeting held in Tokyo, Feb. 1998, TTA and ETSI SMG has agreed the mutual participation to other party's meeting in order to discuss on the harmonization for the common standard of IMT-2000. After TTA finalize the first version of system description (version 0.0) on TTA proposals 2 by the end of March, TTA will participate to appropriate ETSI SMG meeting in order to look for the possibility of harmonization.

However, TTA and TIA TR45 have also agreed the mutual participation to other party's meeting in order to discuss on the harmonization for the common standard of IMT-2000. After TTA finalize the first version of system description (version 0.0) on TTA Proposal 1 by the end of March, TTA will also participate to appropriate TIA TR45 meeting in order look for the possibility of harmonization.

TTA will make every efforts in order to make common global standard for IMT-2000. So TTA will make domestic standard for IMT-2000 after ITU will finalize the relating Recommendations.(see Fig.5 and Fig.6)

2.3 Other Activities

From March, 1998, Korea Radio Promotion Association(RAPA), which is industry association, has initiate a study group for the use of IMT-2000 spectrum. This group, chaired by Dr.K.J.WEE, will make a report on the spectrum by the end of 1998. In the first year this group will initial-study on the international standardization activities, the spectrum assignment plan of foreign countries, possible technologies for FDD and TDD, the methodology for calculating spectrum requirement of terrestrial IMT-2000 and interference problem within and outside of IMT-2000 bands. In the second and third year of study, the group will be continuing the study and the annual report will be submitted to the government.

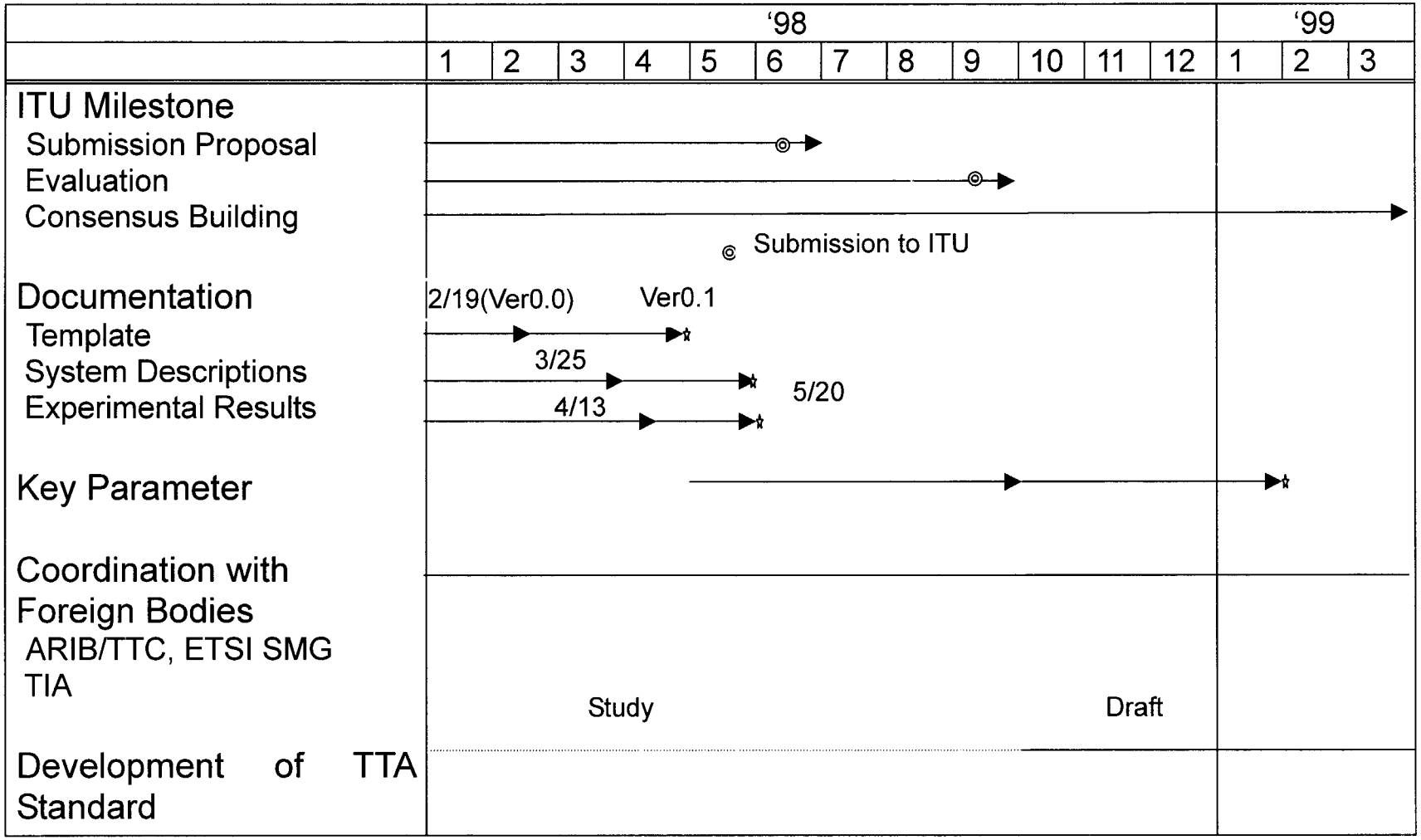

Fig.5 RTT Schedule of TTA

SG	STD Title	1998	1999	2000	2001	2002	Contents/Results
SG1 Network	**Service**						- IMT-2000 service
	FNA						- IMT-2000 Network Architecture
	IF						- IMT-2000 Information Flow
	A-Interface						- IMT-2000 BSC-MSC Interface
	INAP/MAP						- IMT-2000 MSC-LR/AC, MSC- SCP
	B-ISUP						
SG2 Radio Protocol	**IMT-2000 Radio Protocol(FSR)**						- IMT-2000 Radio Protocol Functional Spec. IMT-2000 SDL Design and Evaluation IMT-2000 Packet Data protocol Spec.
	IMT-2000 UIM Interface(FSU)						- UIM Interface Spec.
	IMT-2000 Multi-media Protocol						- IMT-2000 Multimedia Protocol spec.
SG4 RTT	**IMT-2000 Min. Performance of BS**						RKEY
	IMT-2000 Min. Performance of MS						RSPC RSPC Additional I,II
	IMT-2000 Vocoder						
	IMT-2000 RTT						
	Multimedia Spec.						

Fig. 6 Standardization Schedule of TTA

The government, however, has already changed in Feb. 1998 the public notice on the spectrum usage plan of IMT-2000 bands so that the incumbent user on terrestrial IMT-2000 bands(1885-1980, 2010-2025 and 2110-2170MHz) shall move to another bands by Dec. 31, 2000 and the user on satellite bands(1980-2010 and 2170-2200MHz) shall move to another bands by Dec. 31, 1999.

3. Considering

In this section, one question is raised for consideration as a starting point.

- Will there be no win-win solution?

Even though the cost and evolutionary path must be the most key factors for the success of IMT-2000 in market, in the user point of view they would really like to enjoy the mobile multimedia services in anywhere, anytime. It should be the goal of standardization. However it seems that the bar over the worldwide common standard in radio aspects may be the different use of spectrum, IPR issues and lack of cooperative sprits and so on.

Therefore TTA believes that if GSC/RAST would identify or understand the bar, then it would be helpful for the standardization activities to find out the solution to overcome the bar. The short verbal discussion or expression of each understanding or well-developed opinion or resolution would be the appropriate action of GSC/RAST for the first step to resolve the bar.

So TTA would leave the last question to promote the standardization activities.

- How much of benefits does the human being in the developed and developing countries enjoy the worldwide common standard?