

Source: ARIB SWG7 and TTC SWG6-2-1

Title: USIM Standardisation Work in ARIB and TTC

1. Introduction

This document is a report of the USIM standardization activity in SWG7 under ARIB IMT-2000 Study Committee and TTC SWG6-2-1 in Japan, in order to contribute the future USIM standardization process in 3GPP. SWG7 is responsible to specify an interface between USIM and MT, and SWG6-2-1 is working on the GSM network aspect in general, for IMT-2000 system based on WCDMA.

2. Key Standardisation Bodies and 3rd Generation Concept in Japan

ARIB (Association of Radio Industries and Businesses) is a standardization body in Japan for radio communication systems and one of key organizations for IMT-2000 in terms of RAN and terminal aspect. Another key body is called TTC (Telecommunications Technology Committee) which is charged for standardization of network systems in general. TTC is studying CN for IMT-2000 system based on the family concept, in which GSM evolution and ANSI evolution CNs are considered. The IMT-2000 system in ARIB and TTC consists of the two family members, WCDMA plus GSM based CN or ANSI based CN.

3. UIM in ARIB IMT-2000 System

It should be noted that in the Japanese IMT-2000 system physically removable UIM is not necessarily mandatory. It is up to network operators or service providers to provide a user with a removable UIM or an MS with non-removable UIM function.

4. USIM Standardisation Work in ARIB and TTC

4.1 USIM work in ARIB

After SWG7 started in May 1998, it was agreed between ARIB and TTC to share responsibility for the USIM-MT interface standardisation work. ARIB SWG7 is responsible for the lower layers (physical, electrical and logical layers) which are seen to be common between the two family members, while TTC is for the higher layer (file structure and signaling protocol) which could be different depending on the family members. It is recognised that a common lower layer facilitates roaming on IC card basis among different family member systems while the higher layer depends on their CNs.

ARIB SWG7 is charged for over all documentation of USIM-MT interface specifications. It means that the specifications will be provided as one of ARIB standards. A target date to finalise the specification version 1 is April 1999.

4.2. USIM work in TTC

In TTC, co-operation with ARIB SWG7 is one of the important task of SWG6-2-1, which is responsible group for stage 1 & 2 for IMT-2000 signaling protocol. According to split of work with ARIB SWG7, TTC SWG6-2-1 covers the area of stage1&2 for both SIM Application Toolkit and signaling protocol to be applied to USIM-MT interface. Following two work documents, generated by TTC SWG6-2-1, will be submitted to the meeting of first 3GPP TSG-SA WG1 (Service) and first WG2 (Architecture) respectively.

- 1) NW requirements; Stage1
- 2) Functional Information Flow; Stage2

When compared them to GSM 11.11 version7.0.0 and GSM 11.14 version7.0.0, some evolution points have been identified. These points are reflected to a contribution from ARIB, titled "Proposed Evolution Points for USIM Specifications".

5. Baseline Standards

ARIB and TTC have agreed to use the following GSM specifications as baseline standards.

- GSM 11.11 version 7.1.0 (1998-11)
- GSM 11.12 version 4.3.1 (1998-03)
- GSM 11.14 version 7.1.0 (1998-11)

All the standards above are agreed for the GSM evolution, while for the ANSI evolution GSM 11.14 (SIM Application Toolkit) is not agreed and under study.

6. Evolution Points

ARIB SWG7 (and TTC) is studying evolution points in the GSM SIM standards. The evolution point is in general seen as new additional functionality, which is necessary for the 3rd generation to be evolved from the 2nd generation systems. The following points are under study.

- Roaming on IC card basis with the 2nd generation systems (PDC, GSM and cdmaOne)
- SIM Application Toolkit to realise VHE
- Elimination of 5V SIM/USIM

New features for GSM SIM in 1999 (e.g. 1.8V, speed enhancement, T=1 protocol and smaller size SIM/USIM) and USIM portability to other family members are also items to be studied in SWG7.

7. Referenced Documents

The following documents for the USIM standardisation are produced from SWG7 or the other groups in AIRB. The Volume 1 ~~is will be~~ available on the ARIB home page, "<http://www.arib.or.jp/IMT-2000/ARIB/Document/>".

ARIB Volume 1 : Requirements and Objectives for 3G Mobile Services and System (version 0.8, January 1999)

Annex 8 of the ARIB Volume 1 : Security Design Principle (January 1999)

AIF-SWG7-7-3 : UIM Functionality and Requirements for 3G Mobile System (September 1998)

8. Conclusion and ARIB position toward 3GPP

The USIM-MT interface standardization status in AIRB and TTC is described.

Since Japan has the intention to start the commercial service of IMT-2000 around April 2001, it is essential to have the first version of USIM specifications in April 1999. ARIB is willing to be very active to accelerate 3GPP activities, not working on its own specification work, so that 3GPP has the first version (initial draft) of specifications in April 1999, which can be adopted by ARIB.