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SERIES Q: SWITCHING AND SIGNALLING

Signalling requirements and protocols for IMT-2000

# IMT-2000 references to ANSI-41 evolved core network with cdma2000 access network

ITU-T Recommendation Q.1742.1

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# ITU-T Recommendation Q.1742.1

## IMT-2000 references to ANSI-41 evolved core network with cdma2000 access network


**Summary**

This Recommendation associates the published core network standards from standards development organizations (SDOs) with those 3GPP2 specifications that were approved as of 17 July 2001 for the IMT-2000 family member "ANSI-41 evolved Core Network with cdma2000 Access Network."

3GPP2 specifications that were approved as of July 2002 will be associated with published core network standards in future ITU-T Rec. Q.1742.2. The radio interface and radio access network and standards from the SDOs for this IMT-2000 family member are associated in ITU-R M.1457. The associations for other IMT-2000 family members are identified in the ITU-T Q.174x series.

This Recommendation combines and associates the relevant core network standards from a number of standards development organizations for this IMT-2000 family member into a global Recommendation.



**Source**

ITU-T Recommendation Q.1742.1 was prepared by ITU-T Study Group SSG (2001-2004) and approved under the WTSA Resolution 1 procedure on 14 December 2002.

## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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# ITU-T Recommendation Q.1742.1

## IMT-2000 references to ANSI-41 evolved core network with cdma2000 access network

### 1 Scope

This Recommendation identifies the IMT-2000 family member; "ANSI-41 evolved Core Network with cdma2000 Access Network." This set of referenced specifications includes those 3GPP2 specifications that were approved as of 17 July 2001.

The Core Network interfaces identified in this Recommendation and the radio interfaces and radio access network interfaces identified in ITU-R Rec. M.1457-1 [1] constitute a complete system specification for the 3rd generation mobile system for terrestrial usage of this IMT-2000 family member.

It is the intent of the ITU-T that the references in this Recommendation are only to specifications that specify the network aspects of this IMT-2000 family member. In the event that a referenced specification also includes material that specifies any of the radio aspects of this IMT-2000 family member, ITU-R Rec. M.1457-1 [1] shall take precedence.

### 2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.


[1] ITU-R Recommendation M.1457-1 (2001), *Detailed specifications of the radio interfaces of International Mobile Telecommunications-2000 (IMT-2000)*.

[2] ANSI/TIA/EIA-41D (1997), *Cellular Radiotelecommunications Intersystem Operations*.

[3] ANSI/TIA/EIA-95-B (1999), *Mobile Station-Base Station Compatibility Standard for Wideband Spread Spectrum Cellular Systems*.

[4] ANSI/TIA/EIA-124-D (2001), *Wireless Radio Telecommunications Intersystem Non-Signalling Data Communication DMH (Data Message Handler)*.

[5] ANSI/TIA/EIA 136 (2001), *TDMA Cellular PCS*.

[6] ANSI/TIA/EIA-553-A (1999), *Mobile Station – Base Station Compatibility Standard*.

[7] ANSI/TIA/EIA-664 (2000), *Cellular Features Description*.

[8] TIA/EIA/IS-91-A (1999), *Base Station – Mobile Station Compatibility Specification for 800 MHz Cellular, Auxiliary, and Residential Services*.

[9] TIA/EIA/IS-2000 Series, Rev. A (2000), *CDMA 2000 Series*.

[10] TIA/EIA/IS-2001-A (2001), *Interoperability Specifications (IOS) for cdma2000 Access Network Interfaces*.

[11] TSB-29-E (2002), *International Implementation of Wireless Telecommunication Systems Compliant with TIA/EIA-41*.

[12a] CWTS-MC-S.R0005-B (2002), *Network Reference Model for cdma2000 Spread Spectrum Systems*.

[12b] TIA TSB100-A (2001), *Wireless Network Reference Model*.

[12c] TTA TTAE.3G-S.R0005-B (2001), *3GPP2 Network Reference Model for cdma2000 Spread Spectrum Systems*.

[12d] TTC TS-3GB-S.R0005-Bv1.0 (2001), *Network Reference Model for cdma2000 Spread Spectrum Systems*.

## 3 Definitions

This Recommendation defines the following terms:

**3.1 active**: The MS is available for call delivery. This state is maintained by the MSC, the VLR and the HLR. (See also Available, Inactive and Unavailable.)

**3.2 access denial call treatment**: A tone, announcement, or call redirection applied as appropriate.

**3.3 access network**: Network that connects access technologies (such as a Radio Access Network) to the core network.

**3.4 adjunct MSC**: A Mobile Switching Centre (MSC) that is providing adjunct services such as voice response, voice recognition, DTMF tone detection, voice message storage, etc.

**3.5 anchor MSC**: The Mobile Switching Centre (MSC), that is the first to assign a traffic channel to a call on origination or termination. For the duration of this call, this MSC shall be the anchor (fixed) point in the event that the Mobile Station (MS) should be handed off to other MSCs.

**3.6 authentication**: The act of verifying the identity of an entity (e.g., a user, device).

**3.7 available**: The MS can accept a call delivery (i.e., the MS is in a known location and it is in a state able to accept call deliveries). The availability of a MS to accept a call delivery is maintained only by the MSC. (See also Active, Inactive and Unavailable.)

**3.8 base transceiver station**: A piece of radio access network equipment that contains the radios and serves a geographic area.

**3.9 call delivery**: The process by which calls directed to the cellular subscriber are delivered to the subscriber while roaming in a visited system.

**3.10 call delivery method**: Method by which a call is delivered to a subscriber in MSC-V.

**3.11 call disconnect**: The process of requesting the release of a connection between two or more network addresses.

**3.12 call release**: The process of relinquishing the facilities and circuits used for a call.

**3.13 call termination**: The process of connecting a subscriber to an incoming call.

**3.14 candidate MSC**: This term is used during the handoff measurement request by the current serving MSC to reference the MSC that is being requested to provide its best CELL ID and SIGNAL QUALITY values.

**3.15 cell site**: The physical location of a cell's radio equipment and supporting systems. This term is also used to refer to the equipment located at the cell site.

**3.16 clearinghouse**: A service used for the exchange and management of information.

**3.17 data communications**: The digital transmission of information (other than voice).

**3.18 dialogue**: A user interaction sequence composed of tones and announcements that may gather information.

**3.19 gateway MSC**: See MSC-G.

**3.20 home system**: The system which is transmitting the System Identifier (SID) (refer to *TIA/EIA-553*) which is recognized by the MS as the "Home" SID.

**3.21 inactive**: The MS is not available for call delivery. The MS may not be registered. The MS may be registered, but is out of radio contact (e.g., missing autonomous registrations) or is intentionally inaccessible for periods of time (e.g., slotted mode, paging frame class, or sleep mode). An inactive MS may accept SMS message deliveries. This state is maintained by the MSC, the VLR and the HLR. (See also Active, Available, and Unavailable.)

**3.22 market identification (MarketID)**: A unique market identifier that is specified by the service provider (e.g. FCC assigned SID, CIBERNET assigned BID – see *TIA/EIA TSB-29*).

**3.23 mobile assisted handoff (MAHO)**: A process where handoff measurements are done by the MS under the control of the MSC and Base Station. The MSC and Base Station retain the control over when the handoff actually occurs.

**3.24 mobility**: The ability to access services from any point in the network. The degree of service availability may depend on the access network capabilities, as well as any service level agreements between the user's home network and the visited network. Types of mobility include personal mobility, service mobility, and terminal mobility.

**3.25 mobility management**: The set of functions used to manage a mobile user accessing a network other than that user's home network. These functions include communication with the home network for purposes of authentication, authorization, location updating and download of user information.

**3.26 MSC-G**: An MSC that is capable of the Intersystem procedures, defined in this Recommendation, between entities in the network reference model so as to provide service.

**3.27 MSC-H**: The "home" MSC of an MS which is broadcasting the SID that is recorded in the MS's Security and Identification memory, and to which the MS's Directory Number is assigned.

**3.28 MSC-V**: A "visited" MSC in whose service area a roamer is operating.

**3.29 network reference model**: The functional entities and the associated interface reference points that may logically comprise a cellular network. (See Clause 6.)

**3.30 number portability**: A mechanism that allows a user to retain the same directory number, regardless of the subscribed-to service provider. Number portability may be limited to specific geographical areas. In the context of the All-IP network, the term "number portability" refers specifically to ITU-T E.164 numbers used for telephony.

**3.31 originating MSC**: The MSC-H or MSC-G that initiates the call delivery procedures defined in this Recommendation.

**3.32 originating SMS supplementary service**: Services or features that affect SMS message originations and are requested on a per message basis as supported by a particular teleservice, for example, delayed delivery, or message distribution to a list of destinations.

**3.33 personal mobility**: The ability of users to change their association with one or more terminals at any point and time. The user should continue to receive subscribed and otherwise authorized services as supported by the current MS and access network.

**3.34 personalized services**: Services that need access to the subscriber profile and/or are dependent on the overall call/session state (of the user) for reasons of service interaction. An example: a call termination service such as TIA/EIA-41's "Call Forward on Busy".

**3.35 protocol extension**: A mechanism provided to allow systems with a common bilateral agreement to extend the *TIA/EIA-41* protocol. There is a range of reserved Error Codes, Operation Codes, Parameter Identifiers (in addition to PRIVATE Parameter Identifiers), and ranges of values in enumerated parameter types and data fields. The only mechanism to resolve conflicting uses of protocol extension is to standardize their usage. The Protocol Extension mechanism is used at the risk of the implementation. Protocol Extensions should not be used unless the message recipient is known to support them.

**3.36 radio access network**: The network that connects radio base stations to the core network. The RAN provides and maintains radio-specific functions, which may be unique to a given radio access technology, that allow users to access the core network.

**3.37 registered**: The HLR has a pointer to a system serving an MS. A registered MS may be active or inactive.

**3.38 registration**: The procedure by which a MS becomes listed as being present in the service area of an MSC.

**3.39 remote feature control port (RFC Port)**: A terminating directory number supporting service profile modification.

**3.40 roamer port**: A terminating directory number supporting call delivery to mobile stations.

**3.41 roamer service profile**: The specific set of features, capabilities and/or operating restrictions, other than financial accountability, associated with the subscriber.

**3.42 roamer validation**: That aspect of roamer service qualification dealing with financial accountability. Also, the general procedure by which a roamer's financial accountability is established.

**3.43 roaming**: Action whereby users access services while outside of their subscribed home network.

**3.44 service qualification**: The service capabilities, features and privileges to which an MS is entitled. Also, the general procedure by which such service capabilities, features, and privileges become established in an MSC.

**3.45 serving MSC**: The MSC which currently has the MS obtaining service at one of its cell sites within its coverage area.

**3.46 signalling**: The information exchanged between the mobile station and the network, or within the network, for the purposes of service provision (e.g., connection establishment).

**3.47 switch number (SWNO)**: A number uniquely identifying a particular switch (i.e., a group of cell sites and the associated switch resources) within a group of switches associated with a common MarketID.

**3.48 target MSC**: The MSC which was selected from the candidate list as having the cell site with the best signal quality value for the MS during the location request function.

**3.49 temporary local directory number (TLDN)**: A network address temporarily assigned for call set-up.

**3.50 terminating SMS supplementary service**: Services or features that affect SMS message terminations, for example, screening, forwarding, delivery to an MS, delayed delivery while roaming, or distribution to a group based upon a destination address.

**3.51 termination address**: One or more digits, as determined by the Home System, which identify the Terminating Party. This could include Speed Call Codes (when supported by the Home Service Provider), other Mobile Telephone Numbers or any valid World Telephone Number.

**3.52 traffic**: The information generated by the subscriber that is transported on the network (i.e., user voice or data).

**3.53 unavailable**: The MS cannot accept a normal call delivery (i.e., the MS is in an unknown location or it is in a state unable to accept call deliveries). The availability of an MS to accept a call delivery is maintained only by the MSC. (See also Active, Available, and Inactive.)

**3.54 unregistered**: A state where the MS is unavailable for any type of termination event and the HLR pointer is not directed to any visited system.

**3.55 visited network**: The visited network is a carrier's network where a subscriber currently is roaming. The term "visited network" is more business significant than geographically significant.

**3.56 visited system**: From the MS's perspective, a system which is transmitting a SID which is not recognized by the MS as the "Home" SID. From a network perspective, the system in which an MS is currently registered.

## 4 Abbreviations and acronyms

This Recommendation uses the following abbreviations:

| | |
|---|---|
| µ | Microsecond ($10^{-6}$ second) |
| 3G | Third Generation |
| 3GPP2 | Third Generation Partnership Project (ANSI driven) |
| AC | Authentication Centre |
| ADDS | Application Data Delivery Service |
| ADPCM | Adaptive Differential Pulse Code Modulation |
| ADS | Asynchronous Data Service |
| AH | Answer Hold |
| AMPS | Advanced Mobile Phone System |
| ANSI | American National Standards Institute |
| AoC | Advice of Charge |
| ARIB | Association of Radio Industries and Businesses (Japan) |
| BS | Base Station |
| BSC | Base Station Controller |
| BTS | Basic Transceiver System |
| CDCP | Call Data Collection Point |
| CDGP | Call Data Generation Point |
| CDIS | Call Data Information Source |
| CDMA | Code Division Multiple Access |
| CDRP | Call Data Rating Point |
| CNAP | Calling Name Presentation |
| CNAR | Calling Name Restriction |
| CNIP | Calling Name Identification Presentation |
| CSC | Customer Service Centre |

| | |
|---|---|
| CWTS | China Wireless Telecommunication Standard Group |
| DCCH | Dedicated Control Channel |
| DMH | Data Message Handler |
| DP | Data Privacy |
| DP | Detection Point |
| DTMF | Dual Tone Multi-Frequency |
| EIA | Electronic Industries Alliance |
| EIR | Equipment Identity Register |
| ESA | Enhanced Subscriber Authentication |
| ESN | Electronic Serial Number |
| ESP | Encapsulating Security Payload |
| ESP | Enhanced Subscriber Privacy |
| ETSI | European Telecommunications Standards Institute |
| FCC | Federal Communications Commission |
| FPH | Freephone |
| FPLMTS | Future Public Land Mobile Telecommunication Systems – now IMT-2000 |
| GECO | Global Emergency Call Origination |
| GSM | Formerly: Group Special Mobile, Now: Global System For Mobile Communications |
| HA | Home Agent |
| HLR | Home Location Register |
| IETF | Internet Engineering Task Force |
| IMSI | International Mobile Subscriber Identity |
| IMT | International Mobile Telecommunications |
| IMT-2000 | International Mobile Telecommunications-2000 |
| IP | Intelligent Peripheral |
| IP | Internet Protocol |
| IPE | In Path Equipment |
| IS | Interim Standard |
| ISDN | Integrated Services Digital Network |
| ISLP | InterSystem Link Protocol |
| ISO | International Organization for Standardization |
| ITU | International Telecommunication Union |
| ITU-R | International Telecommunication Union – Radiocommunication Sector |
| ITU-T | International Telecommunication Union – Telecommunication Standardization Sector |
| IWF | Interworking Function |
| LBSS | Location-Based Services System |
| MAP | Mobile Application Part |

| | |
|---|---|
| MC | Message Centre |
| MC | Multi-Carrier |
| MDN | Mobile Directory Number |
| MHz | Megahertz ($10^6$ Hertz) |
| MS | Mobile Station |
| MSC | Mobile Switching Centre |
| MSID | Mobile Station Identifier |
| NAM | Number Assignment Module |
| NAMPS | Narrowband Advanced Mobile Phone Service |
| NDSS | Network Directed System Selection |
| NRM | Network Reference Model |
| OAM&P | Operations, Administration, Maintenance and Provisioning |
| OS | Operating System |
| OTAF | Over-the-Air Function |
| OTAPA | Over-the-Air Parameter Administration |
| OTASP | Over-the-Air Service Provisioning |
| PCF | Packet Control Function |
| PCS | Personal Communications Service |
| PCS | Personal Communications System |
| PDE | Positioning Determining Entity |
| PDSN | Packet Data Serving Node |
| PL | Preferred Language |
| PN | Project Number |
| PPC | Pre-Paid Charging |
| PPP | Point-to-Point Protocol |
| PRC | Premium Rate Charging |
| RAN | Radio Access Network |
| RUAC | Rejection of Undesired Annoying Calls |
| R-UIM | Removable User Identity Module |
| SC | Subscriber Confidentiality |
| SCF | Service Call Forwarding |
| SCF | Service Control Function |
| SCP | Service Control Point |
| SID | System Identifier |
| SME | Short Message Entity |
| SMS | Service Management System |
| SMS | Short Message Service |

SN Service Negotiation

SN Service Node

SS7 Signalling System No. 7

SSG Special Study Group

TFO Tandem Free Operation

TIA Telecommunications Industry Association

TMSI Temporary Mobile Station Identity

TR Transmit-Receive (as in TR45)

TRAU Transcoder and Rate Adaptor Unit

TSB Telecommunications Systems Bulletin

TTA Telecommunications Technology Association (Korea)

TTC Telecommunication Technology Committee (Japan)

UIM User Identity Module

USCF User Selective Call Forwarding

VLR Visitor Location Register

WIN Wireless Intelligent Network

WLL Wireless Local Loop

WNP Wireless Number Portability

## 5 Introduction

The Core Network for cdma2000 is based on an evolved ANSI-41 2nd generation mobile system. The core network technical specifications have been developed in a third generation partnership project (approved in 3GPP2 as of 17 July 2001) and transposed to the involved regional Standards Development Organizations (SDOs). The system will support different applications ranging from narrow-band to wide-band communications capability with integrated personal and terminal mobility to meet the user and service requirements.

The Core Network interfaces identified in this Recommendation and the radio interfaces and radio access network interfaces identified in ITU-R Rec. M.1457-1 [1] constitute a complete system specification for the 3rd generation mobile system for terrestrial usage of this IMT-2000 family member.

The descriptions of the technical specifications listed in clause 10 are for informative purposes only. Normative information is in the tables for the respective specification.

## 6 Basic architecture for the ANSI-41 evolved Core Network with cdma2000 Access Network family member

This text is based on references [12a] to [12d] clause 2.1.

Figure 1 presents the network entities and associated reference points that comprise a wireless network. The network entities are represented by squares, triangles and rounded-corner rectangles; the reference points are represented by circles. The network reference model in this Recommendation is the compilation of several reference models currently in use.

- The network reference model is a functional block diagram.

- A network entity represents a group of functions, not a physical device. For example, a Mobile Switching Centre (MSC) is a physical device; it comprises frames, shelves, circuit packs, etc. The physical device may comprise a single network entity such as the MSC, or it may comprise some combination such as the MSC, the Visitor Location Register (VLR), the Home Location Register (HLR), and the Authentication Centre (AC). The physical realization is an implementation issue; a manufacturer may choose any physical implementation of network entities, either individually or in combination, as long as the implementation meets the functional requirements. Sometimes, for practical reasons, the functional network entity is a physical device. The Mobile Station (MS) is an excellent example.
- A reference point is a conceptual point that divides two groups of functions. It is not necessarily a physical interface. A reference point only becomes a physical interface when the network entities on either side of it are contained in different physical devices.
- A "Collective Entity" contains encompassed network entities that are an instance of the collective.
- A "Composite Entity" contains encompassed network entities that are part of the composite.

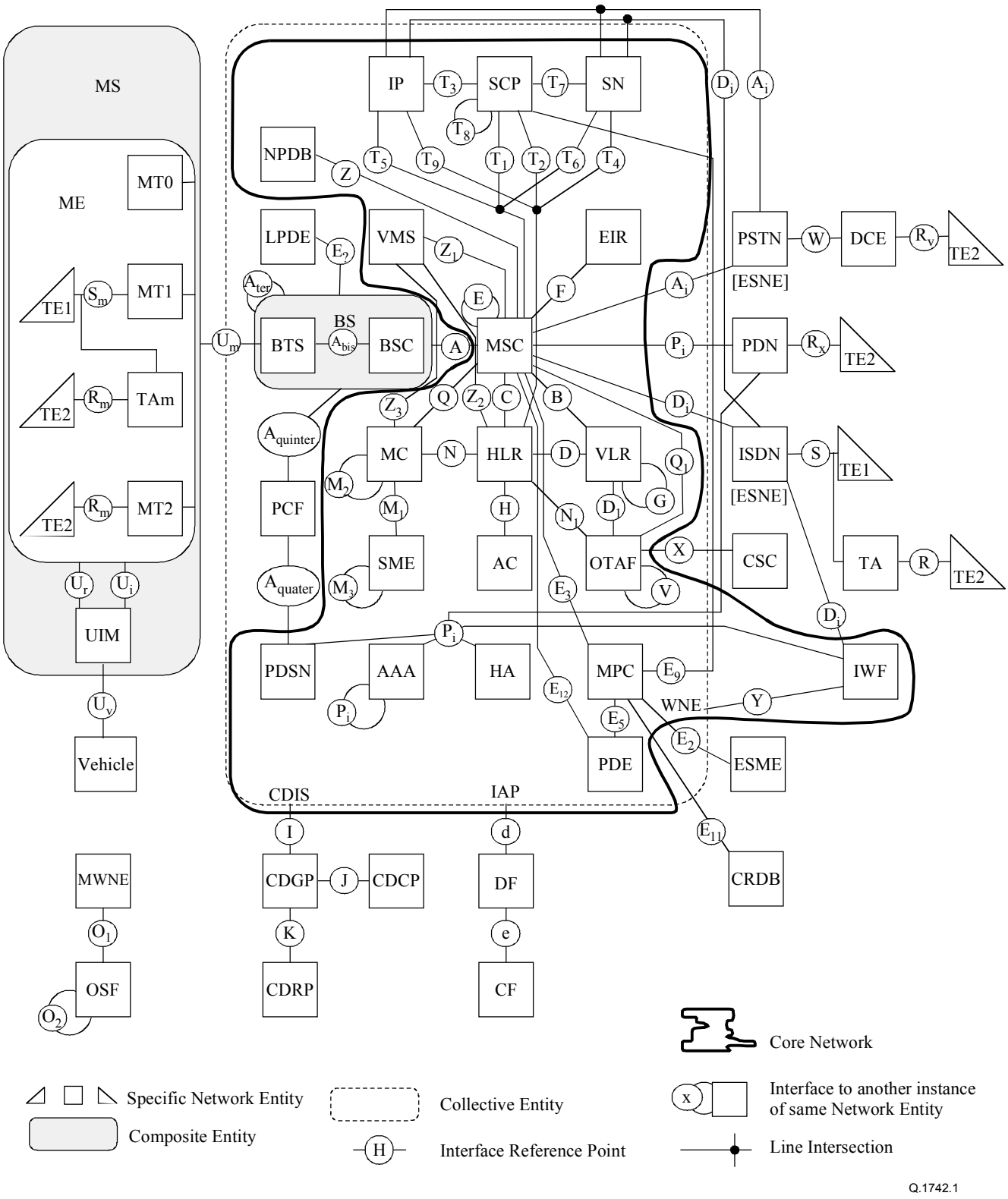


**Figure 1/Q.1742.1 – Network entities and associated reference points**

## 7 Network entities

The text in this clause is based on references [12a] to [12d] clause 2.1.1.

### 7.1 Authentication, Authorization and Accounting (AAA)

The AAA is an entity that provides IP based Authentication, authorization, and Accounting. The AAA maintains security associations with peer AAA entities to support intra- and/or inter-administrative domain AAA functions.

- The Authentication Function provides Authentication of users.
- The Authorization Function of AAA provides authorization of service requests based on subscriber profiles, and network policy. It also generates keys required for establishing security associations between PDSNs in access provider networks and HAs in home IP networks.

The Accounting Function gathers accounting data concerning the services used by individual subscribers.

### 7.2 Authentication Centre (AC)

The AC is an entity that manages the authentication information related to the MS. The AC may, or may not be located within, and be indistinguishable from an HLR. An AC may serve more than one HLR.

### 7.3 Call Data Collection Point (CDCP)

The CDCP is the entity that collects the call detail information.

### 7.4 Call Data Generation Point (CDGP)

The CDGP is an entity which provides call detail information to the CDCP [in ANSI-124 format]. This may be the entity that converts call detail information from a proprietary format into a standard format. All information from the CDGP to the CDCP must be in this standard format.

### 7.5 Call Data Information Source (CDIS)

The CDIS is an entity that can be the source of call detail information. This information may be in proprietary format. It is not required to be in the standard format.

### 7.6 Call Data Rating Point (CDRP)

The CDRP is the entity that takes the unrated call detail information and applies the applicable charge and tax related information. The charge and tax information is added using the standard format.

### 7.7 Collection Function (CF) – [Intercept]

The CF is an entity that is responsible for collecting intercepted communications for a lawfully authorized law enforcement agency.

The CFs typically include:

- the ability to receive and process call contents information for each intercept subject.
- the ability to receive information regarding each intercept subject (e.g. call associated or non-call associated) from the Delivery function and process it.

### 7.8 Coordinate Routing Data Base (CRDB)

The CRDB is an entity that stores information to translate a given position expressed as a latitude and longitude to a string of digits.

### 7.9 Customer Service Centre (CSC)

The CSC is an entity where service provider representatives receive telephone calls from customers wishing to subscribe to initial wireless service or request a change in the customer's existing service. The CSC interfaces proprietarily with the OTAF to perform network and MS related changes necessary to complete the service provisioning request.

### 7.10 Delivery Function (DF) – [Intercept]

The DF is an entity that is responsible for delivering intercepted communications to one or more collection functions.

The DFs typically include:

- the ability to accept call contents for each intercept subject over one or more channels from each Access function;
- the ability to deliver call contents for each intercept subject over one or more channels to a Collection function as authorized for each law enforcement agency;
- the ability to accept information over one or more data channels and combine that information into a single data flow for each intercept subject;
- the ability to filter or select information on an intercept subject before delivery to a Collection function as authorized for a particular law enforcement agency;
- the optional ability to detect audio in-band DTMF digits for translation and delivery to a Collection function as authorized for a particular law enforcement agency;
- the ability to duplicate and deliver information on the intercept subject to one or more Collection functions as authorized for each law enforcement agency;
- the ability to provide security to restrict access.

### 7.11 Equipment Identity Register (EIR)

The EIR is an entity that is the register to which user equipment identity may be assigned for record purposes. The nature, purpose, and utilization of this information is an area for further study.

### 7.12 Home Agent (HA)

The HA is an entity that:

- authenticates Mobile IP registrations from the MS;
- redirects packets to the foreign agent component of the PDSN, and optionally receives and routes reverse packets from the foreign agent component of the PDSN;
- may establish, maintain and terminate secure communications to the PDSN;
- receives provisioning information from the AAA Function for users;
- may assign a dynamic home IP address.

### 7.13 Home Location Register (HLR)

The HLR is the location register to which a user identity is assigned for record purposes such as subscriber information (e.g. Electronic Serial Number (ESN), Mobile Directory Number (MDN), Profile Information, Current Location, Authorization Period).

### 7.14 Intelligent Peripheral (IP)

The IP is an entity that performs specialized resource functions such as playing announcements, collecting digits, performing speech-to-text or text-to-speech conversion, recording and storing voice messages, facsimile services, data services, etc.

### 7.15 Intercept Access Point (IAP)

The IAP is an entity that provides access to the communications to, or from, the equipment, facilities, or services of an intercept subject.

### 7.16 Interworking Function (IWF)

The IWF is an entity that provides information conversion for one or more WNEs. An IWF may have an interface to a single WNE providing conversion services. An IWF may augment an identified interface between two WNEs, providing conversion services to both WNEs.

### 7.17 Local Position Determining Entity (LPDE)

The LPDE facilitates the determination of the position or geographical location of a wireless terminal. Each LPDE supports one or more position determining technologies. Multiple LPDEs using the same technology may serve the coverage area of a Mobile Position Centre (MPC) and the multiple LPDEs each using a different technology may serve the same coverage area of an MPC. Local PDEs (LPDEs) reside at the Base Station (BS).

### 7.18 Managed Wireless Network Entity (MWNE)

A MWNE [within the Collective Entity] or any specific network entity having Operation System wireless management needs, including another Operations System.

### 7.19 Message Centre (MC)

The MC is an entity that stores and forwards short messages. The MC may also provide supplementary services for Short Message Service (SMS).

### 7.20 Mobile Position Centre (MPC)

The MPC selects a PDE to determine the position of a mobile station. The MPC may restrict access to position information (e.g., require that the MS be engaged in an emergency call or only release position information to authorized network entities).

### 7.21 Mobile Switching Centre (MSC)

The MSC switches circuit mode MS originated or MS terminated traffic. An MSC is usually connected to at least one BS. It may connect to the other public networks (PSTN, ISDN, etc.), other MSCs in the same network, or MSCs in different networks. The MSC may store information to support these capabilities.

### 7.22 Number Portability DataBase (NPDB)

The NPDB is an entity which provides portability information for portable Directory Numbers.

### 7.23 Over-The-Air Service Provisioning Function (OTAF)

The OTAF is an entity that interfaces proprietarily to CSCs to support service provisioning activities. The OTAF interfaces with the MSC to send MS orders necessary to complete service provisioning requests.

### 7.24 Packet Data Network (PDN)

A PDN, such as the Internet, provides a packet data transport mechanism between processing network entities capable of using such services.

### 7.25 Packet Data Serving Node (PDSN)

The PDSN routes MS originated or MS terminated packet data traffic. The PDSN establishes, maintains, and terminates link layer sessions to MSs. The PDSN may interface to one or more MSs and may interface to one or more PDNs.

### 7.26 Position Determining Entity (PDE)

A PDE facilitates determination of the position or geographical location of a wireless terminal. Each PDE supports one or more position determining technologies. Multiple PDEs using the same technology may serve the coverage area of an Mobile Position Centre (MPC) and the multiple PDEs each using a different technology may serve the same coverage area of an MPC.

### 7.27 Service Control Point (SCP)

The SCP is an entity that acts as a real-time database and transaction processing system that provides service control and service data functionality.

### 7.28 Service Node (SN)

The SN is an entity that provides service control, service data, specialized resources and call control functions to support bearer-related services.

### 7.29 Short Message Entity (SME)

The SME is an entity that composes and decomposes short messages. A SME may or may not be, located within, and be indistinguishable from, an HLR, MC, VLR, MS, or MSC.

### 7.30 Visitor Location Register (VLR)

The VLR is the location register other than the HLR used by an MSC to retrieve information for handling of calls to or from a visiting subscriber. The VLR may, or may not be located within, and be indistinguishable from an MSC. The VLR may serve more than one MSC.

### 7.31 Voice Message Centre (VMS)

A VMS stores received voice messages, data messages e.g. email, or both message types and supports a method to retrieve previously stored messages. A VMS may also support (on a Directory Number basis) notification of the presence of stored messages and notification of a change in the number of voice messages, data messages, or both message types that are waiting retrieval.

### 7.32 Wireless Network Entity (WNE)

A Network Entity in the wireless Collective Entity.

## 8 Reference Points

This text is based on references [12a] to [12d] clause 2.1.2.

### 8.1 Reference Point B

Reference Point B is the interface between MSC and the VLR.

### 8.2 Reference Point C

Reference Point C is the interface between the MSC and the HLR.

### 8.3 Reference Point D

Reference Point D is the interface between the VLR and HLR.

### 8.4 Reference Point d

Reference Point d is the interface between an IAP and the DF.

### 8.5 Reference Point $D_1$

Reference Point $D_1$ is the interface between the OTAF and the VLR.

### 8.6 Reference Point $D_i$

Reference Point $D_i$ is the interface between:

- the IP and the ISDN;
- the IWF and the ISDN;
- the MSC and the ISDN [ESBE];
- the SN and the ISDN.

### 8.7 Reference Point E

Reference Point E is the interface between the MSC and MSC.

### 8.8 Reference Point $E_3$

Reference Point $E_3$ is the interface between MPC and the MSC.

### 8.9 Reference Point $E_5$

Reference Point $E_5$ is the interface between the MPC and the PDE.

### 8.10 Reference Point $E_9$

Reference Point $E_9$ is the interface between the MPC and the SCP.

### 8.11 Reference Point $E_{11}$

Reference Point $E_{11}$ is the interface between the CRDB and the MPC.

### 8.12 Reference Point $E_{12}$

Reference Point $E_{12}$ is the interface between MSC and the PDE.

### 8.13 Reference Point e

Reference Point e is the interface between the CF and the DF.

### 8.14 Reference Point F

Reference Point F is the interface between the MSC and the EIR.

### 8.15 Reference Point G

Reference Point G is the interface between the VLR and the VLR.

### 8.16 Reference Point H

Reference Point H is the interface between the HLR and the AC.

### 8.17 Reference Point I

Reference Point I is the interface between the CDIS and the CDGP.

### 8.18 Reference Point J

Reference Point J is the interface between the CDGP and the CDCP.

### 8.19 Reference Point K

Reference Point K is the interface between the CDGP and the CDRP.

### 8.20 Reference Point L

Reserved.

### 8.21 Reference Point $M_1$

Reference Point $M_1$ is the interface between the SME and the MC.

### 8.22 Reference Point $M_2$

Reference Point $M_2$ is the MC to MC interface.

### 8.23 Reference Point $M_3$

Reference Point $M_3$ is the SME to SME interface.

### 8.24 Reference Point N

Reference Point N is the interface between the HLR and the MC.

### 8.25 Reference Point $N_1$

Reference Point $N_1$ is the interface between the HLR and the OTAF.

### 8.26 Reference Point $O_1$

Reference Point $O_1$ is the interface between an MWNE and the OSF.

### 8.27 Reference Point $O_2$

Reference Point $O_2$ is the interface between an OSF and the OSF.

### 8.28 Reference Point $P_i$

Reference Point $P_i$ is the interface between:

- the AAA and the AAA;
- the AAA and the PDN;
- the IWF and the PDN;
- the MSC and the PDN; plus
- the PDSN and the PDN.

### 8.29 Reference Point Q

Reference Point Q is the interface between the MC and the MSC.

### 8.30 Reference Point $Q_1$

Reference Point $Q_1$ is the interface between the MSC and the OTAF.

### 8.31 Reference Point $T_1$

Reference Point $T_1$ is the interface between the MSC and the SCP.

### 8.32 Reference Point $T_2$

Reference Point $T_2$ is the interface between the HLR and the SCP.

### 8.33 Reference Point $T_3$

Reference Point $T_3$ is the interface between the IP and the SCP.

### 8.34 Reference Point $T_4$

Reference Point $T_4$ is the interface between the HLR and the SN.

### 8.35 Reference Point $T_5$

Reference Point $T_5$ is the interface between the IP and the MSC.

### 8.36 Reference Point $T_6$

Reference Point $T_6$ is the interface between the MSC and the SN.

### 8.37 Reference Point $T_7$

Reference Point $T_7$ is the interface between the SCP and the SN.

### 8.38 Reference Point $T_8$

Reference Point $T_8$ is the interface between the SCP and the SCP.

### 8.39 Reference Point $T_9$

Reference Point $T_9$ is the interface between the HLR and the IP.

### 8.40 Reference Point V

Reference Point V is the interface between the OTAF and the OTAF.

### 8.41 Reference Point X

Reference Point X is the interface between the CSC and the OTAF.

### 8.42 Reference Point Y

Reference Point Y is the interface between a Wireless Network Entity (WNE) and the IWF.

### 8.43 Reference Point Z

Reference Point Z is the interface between the MSC and the NPDB.

### 8.44 Reference Point $Z_1$

Reference Point $Z_1$ is the interface between the MSC and the VMS.

### 8.45 Reference Point $Z_2$

(Not shown in Figure 1.)

Reference Point $Z_2$ is the interface between the HLR and the VMS.

### 8.46 Reference Point $Z_3$

Reference Point $Z_3$ is the interface between the MC and the VMS.

## 9 Technical specifications structure

This clause provides an overview of the specifications for this IMT-2000 family member based on ANSI-41 evolved Core Network with cdma2000 Access Network. Details for these specifications may be found in clause 10.

The following text describes the numbering scheme for the specifications and reports for the 3GPP2 3rd Generation Mobile System.

The 3GPP2 document-numbering scheme is indicated as follows:

A.Bcccc-w-x version y.z

where:

1) A denotes the TSG (A, C, N, P, S) which developed the specification where:
   - TSG-A develops RAN (i.e., A-interface) specifications;
   - TSG-C develops air interface specifications;
   - TSG-N develops intersystem interface specifications;
   - TSG-P develops packet data specifications;
   - TSG-S develops service and system aspects specifications including Stage 1 requirements descriptions and OAM&P specifications.
2) B denotes project, report, specification (P, R, S).
3) cccc denotes a four (4)-digit number which identifies the specific specification.
4) w denotes revision:
   - 0 is the first release (0th revision);
   - A is the first revision;
   - and so on.
5) x denotes whether this is the prime revision or an addendum:
   - 0 is the prime revision, and is used when the document is first created;
   - 1 is the first addendum;
   - 2 is the second addendum;
   - and so on.
6) y is the "point release" indicator – 0 is used when the document is first created; the number is incremented whenever approved for publishing by the plenary of a TSG (e.g., 1 is the first approval by the plenary for publishing).
7) z is an internal edit level. The internal edit level z is always reset to 0 when the document is approved by the applicable plenary. It is incremented by the entity (e.g., working group) that is developing the document for each new edit release.

NOTE 1 – If the designator w and the designator x are both equal to 0, then neither designator needs to be included.

NOTE 2 – The document reference section does not need to include "version y.z" unless specifically needed to resolve a technical incompatibility that would exist.

## 10 Technical specifications

All dates in the tables of this clause are formatted day-month-year. If no day is shown for the document, then the format is -month-year.

## 10.1 A Series RAN specifications

The 3GPP2 A Series RAN specifications are outside of the scope of this Recommendation. The radio access network to core network interface specifications for the cdma2000 (ANSI-41 evolved core network with cdma2000 access network) system family will be referenced in a new issue of ITU-R Rec. M.1457-1.

## 10.2 Intersystem specifications

### 10.2.1 N.S0003-0 – v.1.0 – User Identity Module (April 2001)

This standard defines the enhancements required for the support of mobile stations equipped with User Identity Modules (UIM). The UIM provides functionality to certain types of mobile stations to enable them to operate in the wireless network.

This document defines requirements for the wireless network to support operation of UIM-equipped mobile stations. A UIM provides compatible mobile stations with the parameters required of mobile stations operating in the TIA/EIA-41 environment and specific additional functionality unique to UIM-equipped mobile stations.

The UIM can be in one of two forms, as either integrated within the mobile, or removable that can be inserted or removed from the mobile equipment. This document addresses Removable UIM (R-UIM) only.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0003-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-808 | | Published | 01-12-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D808 |
| TTA | TTAE.3G-N.S0003 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0003.zip |
| TTC | TS-3GB-N.S0003v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tsns0003-v10.pdf |

### 10.2.2 N.S0004-0 – v 1.0 – WIN Phase 2 (April 2001)

- Triggers for Preferred Language;
- Advice of Charge – Rejection of Undesired Annoying Calls;
- Premium Rate Charging;
- Freephone.

Premium Rate Charging (PRC), Freephone (FPH) and Advice of Charge (AoC) are charging related services that provide a set of advanced wireless charging capabilities. Rejection of Undesired Annoying Calls (RUAC) is a screening service that blocks undesired annoying calls to the subscriber. Enhanced Preferred Language (EPL) uses Wireless Intelligent Network (WIN) capabilities to provide announcements to the subscriber in the subscriber's preferred language. This specification presents a recommended plan for the implementation of WIN capabilities that support these features. The WIN capabilities are for use in the Wireless Radiotelephone Service.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0004-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-848 | | Published | 01-12-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D848 |
| TTA | TTAE.3G-N.S0004 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0004.zip |

### 10.2.3 N.S0005-0 – Version 1.0 – Cellular Radiotelecommunications Intersystem Operations (no date)

The purpose of this document is to identify those cellular services which require intersystem cooperation, to present the general background against which those services are to be provided, and to summarize the principal considerations which have governed and directed the particular approaches taken in the procedural Recommendations.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | YD/T 1031-1999 | 1.0 | Published | -12-1999 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA-41-D | | Published | 01-12-1997 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2D41%2DD |
| TTA | TTAE.3G-N.S0005 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0005.zip |

### 10.2.4 N.S0006 – Version 1.0.0 – PCS Multi-band Based on IS-41-C Revision: 0 (28 January 2000)

This document presents recommendations for supporting Multi-Band Handoffs (1800 MHz to 1800 MHz, 1800 MHz to 800 MHz, 800 MHz to 1800 MHz, and 800 MHz to 800 MHz).

This Recommendation defines Multi-Band handoffs to include:

- intra-band intersystem handoffs (800 MHz Cellular to 800 MHz Cellular and 1800 MHz PCS to 1800 MHz PCS); plus
- inter-band intersystem handoffs (1800 MHz PCS to 800 MHz Cellular and 800 MHz Cellular to 1800 MHz PCS);
- handoffs for Mobile Stations (MS) supporting AMPS, CDMA, NAMPS and TDMA operating modes.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0006 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TSB76 | | Published | 01-09-1996 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TSB76 |
| TTA | TTAE.3G-N.S0006 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0006v1.0.0.pdf |
| TTC | JP-3GB-N.S0006 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0006.pdf |

### 10.2.5 N.S0008 – Version 1.0 – Circuit Mode Services (no date)

This standard presents a recommended plan for the implementation of Uniform Features for use in the Cellular Radiotelephone Service. Its intent is to describe services and features so that the manner in which a subscriber may place calls using such features and services may remain reasonably consistent from system to system. It is not intended to require that specific service offerings be required of all service providers.

Services:

- Asynchronous Data Service (ADS);
- Data Privacy (DP);
- Group 3 Facsimile Service (G3 Fax);
- Service Negotiation (SN);
- Mobile Termination Functions.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0008 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA-737 | | Published | 01-01-2002 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2D737 |
| TTA | TTAE.3G-N.S0008 V1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0008v1.0.pdf |
| TTC | JP-3GB-N.S0008 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0008.pdf |

### 10.2.6 N.S0009-0 – Version 1.0 – IMSI (no date)

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0009-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA-751 | | | 01-01-2002 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2D751 |
| TTA | TTAE.3G-N.S0009 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0009.zip |
| TTC | JP-3GB-N.S0009 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0009.pdf |

### 10.2.7 N.S0010-0 – Version 1.0 – Advanced features in Wideband Spread Spectrum Systems (no date)

For this revision of this standard, the advanced CDMA features include: Network Directed System Selection (NDSS) and Subscriber Confidentiality (SC) supported by TMSI.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0010-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA-735 | | Published | 01-01-2002 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2D735 |
| TTA | TTAE.3G-N.S0010 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0010-0v1.0.pdf |
| TTC | JP-3GB-N.S0010-0 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0010.pdf |

### 10.2.8 N.S0011-0 – Version 1.0 – OTASP and OTAPA (no date)

This document presents recommendations for supporting the Over-The-Air "Service Provisioning" (OTASP) and "Parameter Administration" (OTAPA) capability.

Specifically, this document includes Stage-1 recommendations for OTASP Subscriber Feature and OTAPA Network Feature Descriptions. It also provides intersystem operation recommendations for supporting the OTASP & OTAPA capability for the CDMA and TDMA air interfaces, with Stage-2 operations and scenarios, Stage-3 operations and parameter definitions plus Stage-3 procedures.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0011-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-725-A | | Published | 01-07-1999 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D725%2DA |
| TTA | TTAE.3B-N.S0011 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0011.zip |
| TTC | JP-3GB.N.S0011 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0011.pdf |

### 10.2.9 N.S0012-0 – CNAP/CNAR – Revision: 0 (28 January 2000)

This document presents a recommended plan for the implementation of Calling Name Presentation (CNAP) and Calling Name Restriction (CNAR) for use in the Wireless Radiotelephone Service.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0012-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA-764 | | Published | 01-01-2002 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2D764 |
| TTA | TTAE.3B-N.S0012 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0012.zip |
| TTC | JP-3GB-N.S0012 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0012.pdf |

### 10.2.10 N.S0013-0 – Version 1.0 – WIN Phase 1 (no date)

The Wireless Intelligent Network (WIN) is a network which supports the use of intelligent network capabilities to provide seamless terminal services, personal mobility services and advanced network services in mobile environment.

This document presents a recommended plan for the implementation of the Wireless Intelligent Network (WIN) for use in the Wireless Radiotelephone Service.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0013-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-771<br>TIA/EIA/IS-771-1 | <br>Adden-dum 1 | Published<br>Published | 01-07-1999<br>01-08-2001 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D771 |
| TTA | TTAE.3B-N.S0013 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0013.zip |
| TTC | JP-3GB-N.S0013 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0013.pdf |

### 10.2.11 N.S0014-0 – Version 1.0 – Authentication Enhancements (no date)

This standard presents a recommended plan for the implementation of authentication enhancements for use in the Wireless Radiotelephone Service. Its intent is to describe the authentication enhancements so that the manner in which a system implements them may remain reasonably consistent from system to system.

The authentication enhancements include:

- count Update after Handoff;
- obtaining subscriber profile before authentication on initial system access;
- handling of suspicious call originations;
- identification of the Serving MSC when reporting the outcome of a requested authentication operation;
- handling of authentication-capable mobile stations when the home system is not authentication-capable;
- clarification and editorial correction of authentication procedures;
- miscellaneous authentication enhancements.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0014-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-778 | | Published | 01-03-1999 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D778 |
| TTA | TTAE.3B-N.S0014 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0014.zip |
| TTC | JP-3GB-N.S0014 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0014.pdf |

### 10.2.12 N.S0015 – Version 1.0.0 – ANSI-41-D Miscellaneous Enhancements (28 January 2000)

This document is intended to justify *TIA/EIA-41-D* technical enhancement or technical correction contributions that have been supported for incorporation into PN-3590 (*TIA/EIA-41-E*) but are not expected to be published in a *TIA/EIA-41-D* enhancement Interim Standard (IS).

This document is for tracking purposes only; there is no intention of publishing the contents of this document independent of ANSI/TIA/EIA-41-E.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0015 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-N.S0015 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0015v1.0.0.pdf |

### 10.2.13 N.S0016-0 – Version 1.0 – TIA/EIA-41-D Internationalization (no date)

This document specifies the ANSI/TIA/EIA-41-D Chapters 1, 3, 5 and 6 enhancements that are necessary to support international intersystem operations.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0016-0 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-807<br>TIA/EIA/IS-807-1 | <br>Adden-dum 1 | Published<br>Published | 01-08-1999<br>01-03-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D807 |
| TTA | TTAE.3G-N.S0016 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0016.zip |
| TTC | JP-3GB-N.S0016 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0016.pdf |

### 10.2.14 N.S0017-A – Version 1.0.0 – International Implementation of Wireless Telecommunication Systems Compliant with TIA/EIA-41 Revision: A (16 March 2001)

When the first edition of Mobile Station – Land Station Compatibility Specification (IS-3, now TIA/EIA-553-A) was issued, it was envisioned that it would be adopted for use within Northern America. Provisions were included for international implementation; however, detailed guidelines to assist with such implementations were not included. Subcommittee TR-45.2 recognized the need to provide such guidance, and charted a Working Group (Working Group VI) with this responsibility. The result of this Working Group's deliberations has been the production of TSB-29 as well as ongoing internationalization of other TIA standards, such as TIA/EIA-41-D, TIA/EIA/IS-751, TIA/EIA/IS-807, TIA/EIA-124, TIA/EIA-136, IS-95, IS-91 and TIA/EIA-2000.

The principle aspects of international implementation addressed by this document are:

- the administration and assignment of System Identification Numbers (SIDs);
- the administration and assignment of Mobile Identification Numbers (MINs);
- format of International Mobile Subscriber Identifiers (IMSIs);
- configuration and inter-operation of national SS7 networks in support of international roaming.

The goal of this publication is to provide the international wireless telecommunications industry with the framework permitting the coordinated implementation of Wireless Radio Telecommunication Systems in compliance with the provisions of the AMPS family of air interface standards (e.g., TIA/EIA-553, IS-54, IS-91, IS-95, TIA/EIA-2000 and TIA/EIA-136).

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0017 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TSB29-D | | Published | 01-12-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TSB29%2DD |
| TTA | TTAE.3G-N.S0017-A v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0017-Av1.0.0.pdf |
| TTC | TS-3GB-N.S0017-Av1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tsns0017-A-v10.pdf |

### 10.2.15 N.S0018 – Version 1.0.0 – TIA/EIA-41-D Prepaid Charging (14 July 2000)

Pre-Paid Charging (PPC) allows the subscriber to pay for voice telecommunication services prior to usage. This document presents a recommended plan for the implementation of Wireless Intelligent Network (WIN) capabilities that support PPC. The WIN capabilities that support PPC are for use in the Wireless Radiotelephone Service.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0018-0 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-826 | | Published | 01-09-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D826 |
| TTA | TTAE.3G-N.S0018 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0018.zip |
| TTC | JP-3GB-N.S0018 | 2 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpns0018.pdf |

### 10.2.16 N.S0019 – Version 1.0.0 – Intersystem Link Protocol Revision: 0 (28 January 2000)

This document specifies an Intersystem Link Protocol (ISLP) for circuit-mode data services. These data services include Asynchronous Data (ADS) and Group-3 Fax as specified in IS-99 [2] and IS-135 [4]. The ISLP adapts between air-interface data rates and higher-speed intersystem rates. The ISLP may be used between a serving system and an anchor system, possibly through one or more tandem systems.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0019-0 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA-728 | | Published | 01-01-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2D728 |
| TTA | TTAE.3G-N.S0019 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0019.zip |
| TTC | JP-3GB-N.S0019 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpns0019.pdf |

### 10.2.17 N.S0020 – TIA/EIA-41-D – Message Segmentation (August 1999)

This standard presents needed text changes to *ANSI/TIA/EIA-41-D* to provide support of lower layer (i.e., SS7 SCCP) segmentation and reassembly of ANSI-41 *MAP* messages.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0020 | | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-812 | | Published | 01-08-1999 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D812 |
| TTA | TTAE.3G-N.S0020 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-N_S0020.zip |

### 10.2.18 N.S0021 – Version 1.0.0 – User Selective Call Forwarding Revision: 1 (14 July 2000)

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the User Selective Call Forwarding (USCF) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0021-0 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-838 | | Published | 01-07-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D838 |
| TTA | TTAE.3G-N.S0021 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0021v1.0.0.pdf |
| TTC | JP-3GB-N.S0021 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpns0021.pdf |

### 10.2.19 N.S0022 – Version 1.0.0 – Answer Hold (14 July 2000)

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Answer Hold (AH) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0022 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-837 | | Published | 01-09-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D837 |
| TTA | TTAE.3G-N.S0022 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0022v1.0.0.pdf |
| TTC | JP-3GB-N.S0022 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpns0022.pdf |

### 10.2.20 N.S0023-0 – Version 1.0 – Automatic Code Gapping (no date)

This document presents a recommended plan for the implementation of Automatic Code Gapping (ACG) for use in the Wireless Radiotelephone Service. ACG is used to reduce the rate at which a network entity, typically an MSC, sends service request messages to a service control function (SCF) network entity. ACG controls can be applied automatically by the SCF when it is in overload. ACG controls can also be applied by an SCF for purposes of SCF service management.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0023-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-786 | | Published | 01-11-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D786 |
| TTA | TTAE.3G-N.S0023-0 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0023-0v1.0.pdf |
| TTC | JP-3GB-N.S0023 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpns0023.pdf |

### 10.2.21 N.S0024-0 – Version 1.0 – Network support for MDN-Based Message Centres (November 2000)

This document is intended to identify *TIA/EIA-41-D* WNP-PH3 (Wireless Number Portability – Phase III) technical enhancements required to support SMS (Short Message Service) delivery to MDN (Mobile Directory Number) based MCs (Message Centres). These enhancements have been supported for incorporation into PN-3590 *(TIA/EIA-41-E*) and are being published as a *TIA/EIA-41-D* enhancement Interim Standard (IS).

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0024-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-841 | | Published | 01-09-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D841 |
| TTA | TTAE.3G-N.S0024-0 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0024-0v1.0.pdf |
| TTC | TS-3GB-N.S0024v1.0 | 1 | TTC Published | 29-08-2001 | http://www.ttc.or.jp/imt2000/ts/tsns0024-v10.pdf |

### 10.2.22 N.S0025 – Version 1.0.0 – Roamer Database Verification (January 2001)

This document presents a recommended plan for the implementation of Roamer Database Verification (RDV) for use in the Wireless Radiotelephone Service. RDV enables a home system to verify that a roaming partner's VLF database is correctly loaded for the MSID number ranges that "belong" to the home service provider. At the request of the HLR, the VLR examines its roamer

database to verify that subscribers within the requested MSID range are allowed to roam in the visited system.

RDV provides a tool to assist in resolving problems experienced by home system subscribers when roaming in the visited system.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0025 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-847 | | Published | 01-03-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D847 |
| TTA | TTAE.3G-N.S0025 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0025v1.0.0.pdf |
| TTC | TS-3GB-N.S0025v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tsns0025-v10.pdf |

### 10.2.23 N.S0026 – Version 1.0.0 – Wireless Radio Telecommunication Intersystem Non-Signalling Data Communication DMH (August 2000)

This standard is complementary to the ANSI-41, Cellular Radiotelecommunications Intersystem Operations, series of standards and identifies wireless services specifically involving non-signalling data communications which require intersystem cooperation cooperation, presents the general background against which those services are to be provided and summarizes the principal considerations which have governed and directed the particular approaches taken in the procedural recommendations.

This standard describes the messages and procedures required to perform call detail record data transmission between systems.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0026 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA-124-D | | Published | 01-12-2001 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2D124%2DD |
| TTA | TTAE.3G-N.S0026 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0026v1.0.0.pdf |

### 10.2.24 N.S0027 – Version 1.0.0 – Enhanced International Dialling, Calling Number Identification & Callback, Calling Party Category Identification (April 2001)

This document presents a recommended plan for the implementation of enhanced international dialling, calling number identification and callback, and calling party category identification for use in the Wireless Radiotelephone Service.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-N.S0027 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-875 | | Published | 01-05-2001 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D875 |
| TTA | TTAE.3G-N.S0027 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-N.S0027v1.0.0.pdf |
| TTC | TS-3GB-N.S0027v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tsns0027-v10.pdf |

## 10.3 Packet data specifications

### 10.3.1 P.S0001-A – Version 3.0.0 – Wireless IP Network Standard (16 July 2001)

This standard defines requirements for support of wireless packet data networking capability on a third generation wireless system based on cdma2000. This specification is based on P.R0001; cdma2000 Wireless IP Network Architecture based on IETF protocols.

This standard defines the two methods for accessing Public networks (Internet) and Private networks (Intranets): Simple IP and Mobile IP, and the required Quality of Service and Accounting support. IETF protocols are widely employed whenever possible to minimize the number of new protocols required and to maximize the utilization of well accepted standards and hence the speed to market. Reference to the required IETF protocols is provided in section 3 of this standard.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-P.S0001-A | 3.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA/IS-835-A | | Published | 01-05-2001 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2FIS%2D835%2DA |
| TTA | TTAE.3G-P.S0001-A v3.0.0 | 3.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-P.S0001-Av3.0.0.pdf |
| TTC | TS-3GB-P.S0001-Av3.0 | 1 | TTC Published | 29-08-2001 | http://www.ttc.or.jp/imt2000/ts/tsps0001-A-v30.pdf |

## 10.4 Services and system aspects specifications

### 10.4.1 S.R0003 – Version 1.0.0 – 3GPP2 – System Capability Guide Release A (20 January 2000)

This document is the 3GPP2 System Capability Guide (SCG) for 3GPP2 wireless telecommunication systems. It is developed and maintained under the auspices of 3GPP2 TSG-S, the TSG for Services and Systems Aspects for 3GPP2.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| ARIB | TR-T13-S.R0003 | 1.3 | ARIB Published | 31-05-2001 | http://www.arib.or.jp/IMT-2000/ARIB-STD/ITU-T/ARIB TR-T13-S.R0003.pdf |
| CWTS | CWTS-MC-S.R0003 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0003-A | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0003-A.zip |

#### 10.4.1.1 S.R0003-A – Version 1.0 – 3GPP2 – System Capability Guide Release B (14 June 2001)

This document is the 3GPP2 System Capability Guide (SCG) for 3GPP2 wireless telecommunication systems. It is developed and maintained under the auspices of 3GPP2 TSG-S, the TSG for Services and Systems Aspects for 3GPP2.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0003-A | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0003-A | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0003-A.zip |

### 10.4.2 S.R0004 – Version 1.0.0 – Service Implementation Guide Revision: 0 (20 January 2000)

This Service Implementation document describes and defines features adopted by 3GPP2 TSG-S. The features descriptions may include both Stage-1 and Stage-2 functional levels.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0004 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0004v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0004v1.0.0.pdf |

### 10.4.3 S.R0005-B – Version 1.0 – Network Reference Model for cdma2000 Spread Spectrum Systems Revision: B (16 April 2001)

This document recommends the basic 3GPP2 Wireless Network Reference Model.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0005-B | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TSB100-A | | Published | 2001-03-01 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TSB100%2DA |
| TTA | TTAE.3G-S.R0005-B | 1 | Approved | 2001-12-19 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0005-B.zip |
| TTC | TS-3GB-S.R0005-Bv1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0005-B-v10.pdf |

### 10.4.4 S.R0006 – Version 1.0.0 – Wireless Features Description Revision: 0 (13 December 1999)

This standard presents a recommended plan for the implementation of Uniform Features for use in the Wireless Radiotelephone Service. Its intent is to describe services and features so that the manner in which a subscriber may place calls using such features and services may remain reasonable consistent from system to system. It is no intended to require that specific service offerings be required of all service providers.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0006 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TIA | TIA/EIA-664-A | | Published | 01-12-2000 | http://www.tiaonline.org/standards/search_results2.cfm?document_no=TIA%2FEIA%2D664 |
| TTA | TTAE.3G-S.R0006 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0006v1.0.0.pdf |
| TTC | JP-3GB-S.R.0006 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0006.pdf |

### 10.4.5 S.R0007 – Version 1.0.0 – User Selective Call Forwarding (Stage 1) Revision: 0 (13 December 1999)

This Interim Standard (IS) presents Stage-1 (new chapter *TIA/EIA-664-B*), Stage-2 (*TIA/EIA-41.3-D* enhancements), and Stage-3 (*TIA/EIA-41.5-D* and *TIA/EIA-41.6-D* enhancements) recommendations for supporting the User Selective Call Forwarding (USCF) feature use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the User Selective Call Forwarding (USCF) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0007 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0007(v.1.0) | 1.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0007 v1.0.zip |

#### 10.4.5.1 S.R0007 – Version 2.1 – User Selective Call Forwarding (Stage 1) (31 January 2001)

This Interim Standard (IS) presents Stage-1 (new chapter *TIA/EIA-664-B*), Stage-2 (*TIA/EIA-41.3-D* enhancements), and Stage-3 (*TIA/EIA-41.5-D* and *TIA/EIA-41.6-D* enhancements) recommendations for supporting the User Selective Call Forwarding (USCF) feature use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the User Selective Call Forwarding (USCF) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0007 | 2.1 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0007(v.2.1) | 2.1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0007v2.1.zip |
| TTC | TS-3GB-S.R0007v2.1 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0007-v21.pdf |

### 10.4.6 S.R0008 – Version 1.0.0 – Answer Hold (Stage 1) Revision: 0 (13 December 1999)

This Interim Standard (IS) presents Stage-1 (new chapter *TIA/EIA-664-B*), Stage-2 (*TIA/EIA-41.3-D* enhancements), and Stage-3 (*TIA/EIA-41.5-D* and *TIA/EIA-41.6-D* enhancements) recommendations for supporting the Answer Hold (AH) feature use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Answer Hold (AH) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0008 | 2.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0008(V.1.0) | 1.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0008v1.0.zip |

#### 10.4.6.1 S.R0008 – Version 2.0 – Answer Hold (Stage 1) Revision: 0 (8 December 2000)

This Interim Standard (IS) presents Stage-1 (new chapter *TIA/EIA-664-B*), Stage-2 (*TIA/EIA-41.3-D* enhancements), and Stage-3 (*TIA/EIA-41.5-D* and *TIA/EIA-41.6-D* enhancements) recommendations for supporting the Answer Hold (AH) feature use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Answer Hold (AH) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0008 | 2.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0008(V.2.0) | 2.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0008v2.0.zip |
| TTC | JP-3GB-S.R0008 | 2 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0008.pdf |

### 10.4.7 S.R0009-0 – v1.0 – User Identity Module (Stage 1) Revision: 0 (13 December 1999)

This standard defines the enhancements required for the support of mobile stations equipped with User Identity Modules (UIM). The UIM provided functionality to certain types of mobile stations to enable them to operate in the wireless network.

This document defines requirements for the wireless network to support operation of UIM-equipped mobile stations. A UIM provides compatible mobile stations with the parameters required of Mobile stations operating in the TIA/EIA-41 environment and specific additional functionality unique to UIM-equipped mobile stations.

The UIM can be in one of two forms, as either integrated within the mobile or removable that can be inserted or removed from the mobile equipment. This document address Removable UIM (R-UIM) only.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0009-0 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0009 | 1 | Approved | 13-04-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0009.zip |
| TTC | TS-3GB-S.R0009 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0009-v10.pdf |

### 10.4.8 S.R0010 – Version 1.0.0 – Preferred Language (Stage 1) Revision: 0 (13 December 1999)

Preferred Language (PL) provides the subscriber the ability to specify the language for network services.

Network services which could be offered in the subscriber's preferred language include:

- recorded announcements;
- directory assistance;
- operator services;
- emergency services;
- "Help" lines;
- Message Waiting Notification;
- CNIP *number not available*;
- CNIP *number restricted*.

If the subscriber's preferred language is not available, service shall be provided in the default language, which shall be determined by the wireless network operator.

PL does not impact a subscriber's ability to originate calls or to receive calls.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0010 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0010 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0010.zip |
| TTC | JP-3GB-S.R0010 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0010.pdf |

### 10.4.9 S.R0011 – Version 1.0.0 – Advice of Charge (Stage 1) Revision: 0 (13 December 1999)

This specification presents Stage-1 for supporting the Advice of Charge feature for use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Advice of Charge (AoC) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0011 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0011 | 1 | Approved | 13-07-02000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0011.zip |
| TTC | JP-3GB-S.R0011 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0011.pdf |

### 10.4.10 S.R0012 – Version 1.0.0 – Rejection of Undesired Annoying Calls (Stage 1) Revision: 0 (13 December 1999)

This specification presents Stage-1 for supporting Rejection of Undesired Annoying Calls feature for use in the Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Rejection of Undesired Annoying Calls (RUAC) feature.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0012 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0012 | 1 | Approved | 13-07-02000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0012.zip |
| TTC | JP-3GB-S.R0012 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0012.pdf |

### 10.4.11 S.R0013 – Version 1.0.0 – Global Emergency Call Origination (GECO) Revision: 0 (13 December 1999)

This document presents a Stage-1 description for a Global Emergency Call Origination (GECO) which will increase the probability that any user can originate a call to a Public Service Access Point (PSAP) even in those service areas where the Emergency Service Access Number (ESAN) is not known to the user.

The intent of GECO is described as follows:

- The MS may provide a means for the user to initiate an emergency call.
- A special form of the call origination message (defined as an Global Emergency Call Origination Message (GECO_MSG) may be issued by the MS in lieu of the normal call origination message to indicate that the call origination being requested is an emergency call origination. GECO_MSGs may be accepted and the GECO call connected by the network from both subscribed and unsubscribed mobiles. The system may support "implicit registration" for GECO calls such that the use of registration request/acceptance protocol is not required prior to the issuance of a GECO_MSG.
- If the MS is currently registered on and accessing an operating network when the GECO call is initiated by the user, the MS may use that system to initiate the GECO call. If the MS is not currently accessing a system, the MS may attempt to access its preferred service as indicated by its internal system selection and system access restriction programming to maximize the probability that the GECO call will be accepted by the system. If no preferred system is available, the MS may override its internal system selection and system access restriction programming in an attempt to access any available system.
- Initiation of GECO call by the MS shall in no way degrade the user's access to any other feature/service which would normally be available to him from the accessed service provider's network.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0013 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0013 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0013.zip |
| TTC | JP-3GB-S.R0013 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0013.pdf |

### 10.4.12 S.R0014 – Version 1.0.0 – Tandem Free Operation (Stage 1) Revision: 0 (13 December 1999)

It is expected that the need for Tandem Free Operations will be driven by the increasing market penetration of digital technologies which will result in an increase in percentage of calls that mobile-to-mobile calls. In addition, given that the effects of tandem vocoding are greater for lower bit-rate vocoders, the need for this feature becomes greater as the use of low bit-rate vocoders increases. The Tandem Free Operation (TFO) feature, also know as Vocoder Bypass, improves the end-to-end voice equality observed in mobile-to-mobile voice calls in wireless networks.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0014 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0014 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0014.zip |
| TTC | JP-3GB-S.R0014 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0014.pdf |

### 10.4.13 S.R0015 – Version 1.0.0 – ISDN Interworking (Stage 1) Release A (13 December 1999)

This document presents Stage-1 (new chapter TIA/EIA-664-B) recommendations for supporting the ISDN Interworking feature use in Wireless Radiotelephone Service.

This document specifies the wireless intersystem network operation enhancements required for supporting subscribers with the ISDN Interworking feature. This document defines the functional characteristics for interconnecting to ISDN in circuit switched mode. The interworking function in ISDN packet mode, i.e., B-channel Packet is out of scope at present.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0015 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0015 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0015.zip |
| TTC | JP-3GB-S.R0015 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0015.pdf |

### 10.4.14 S.R0016 – Version 1.0.0 – Automatic Code Gapping (Stage 1) Revision: 0 (13 December 1999)

Automatic Code Gapping (ACG) is intended to provide a Network Entity, such as a Service Control Point (SCP) or Service Control Function (SCF), the ability to turn off selected types of traffic that may be passing through its domain of operation. The purpose for ACG may be load related or in response to a traffic engineering command as from a Service Management System (SMS). This report provides a general description of ACG as it applies to 3G network operations. Specific applications will be defined in other documents or later versions of this document.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0016 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0016 (V.1.0) | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0016.zip |

#### 10.4.14.1 S.R0016 – Version 2.0 – Automatic Code Gapping (Stage 1) Revision: 0 (8 December 2000)

Automatic Code Gapping (ACG) is intended to provide a Network Entity, such as a Service Control Point (SCP) or Service Control Function (SCF), the ability to turn off selected types of traffic that may be passing through its domain of operation. The purpose for ACG may be load-related or in response to a traffic engineering command as from a Service Management System (SMS). This report provides a general description of ACG as it applies to 3G network operations. Specific applications will be defined in other documents or later versions of this document.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0016 | 2.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0016(V.2.0) | 2.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0016v2.0.zip |
| TTC | JP-3GB-S.R0016 | 2 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0016.pdf |

### 10.4.15 S.R0017 – 3G Wireless Network Management System High Level Requirements Revision: 0 (13 December 1999)

This report specifies the 3G Wireless Network Management System High Level Requirements Including: OAM&P TMN Applications Required Network and Systems Management Processes and Network Reference Model (NRM).

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0017 | | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0017 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0017.zip |

### 10.4.16 S.R0018 – Version 1.0.0 – Pre-Paid Charging (Stage 1) Revision: 0 (13 December 1999)

PPC allows the subscriber to pay for voice telecommunication services prior to usage.

A PPC subscriber establishes an account with the service provider to access voice telecommunications services in home and roaming networks. Charges for voice telecommunication services are applied to the PPC account by decrementing the account in real time. The PPC subscriber may be notified about the account information at the beginning, during, or at the end of the voice telecommunications service. When the account balance is low, the subscriber may be notified so that the subscriber may refill the account. When the account balance is below a pre-defined threshold, the subscriber's use of voice telecommunications services may be de-authorized.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0018 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0018 | 1 | Approved | 13-07-2000 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0018.zip |
| TTC | JP-3GB-S.R0018 | 1 | TTC Published | 31-03-2000 | http://www.ttc.or.jp/imt2000/std/jpsr0018.pdf |

### 10.4.17 S.R0019 – Version 1.0.0 – Location-Based Services System (LBSS) Stage-1 Description (22 September 2000)

This document defines LBSS for implementation in 3GPP2 systems. The location services functionality has been adopted from existing TR-45 standards as defined and also as described in the following text.

The scope of this document includes 3GPP2 system support required to facilitate Location-Based services.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0019 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0019 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0019v1.0.0.pdf |
| TTC | JP-3GB-S.R0019 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0019.pdf |

### 10.4.18 S.R0021 – Version 1.0 – Video Streaming Service – Stage 1 (10 July 2000)

The objective is to define and to standardize the functionality of Video Services that can be incorporated into the operations of wireless telecommunications networks. Audio-only streaming is a special case of video streaming. This document defines the functional characteristics and requirements of the video streaming services. The areas that must be defined are service features and system requirements, necessary for video streaming services to be provided in wireless telecommunications networks.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0021 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0021 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0021v1.0.pdf |
| TTC | JP-3GB-S.R0021 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0021.pdf |

### 10.4.19 S.R0022 – Version 1.0 – Video Conferencing Service (10 July 2000)

The objective is to define and to standardize the functionality of Video Services that can be incorporated into the operations of wireless telecommunications networks. This report defines the functional characteristics and the requirements of the video conferencing services. The areas that must be defined are service features and system requirements in order for voice conferencing services to be provided in wireless telecommunications networks.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0022 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0022 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-.R0022v1.0.pdf |
| TTC | JP-3GB-S.R0022 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0022.pdf |

### 10.4.20 S.R0023 – Version 1.0 – High-Speed Data Enhancements for cdma2000 1x – Data Only (9 June 2000)

This document outlines the key operator requirements for the evolution of the cdma2000 1x (current versions of C.S0001 through C.S0005) standard. This document will refer to this evolution as 1x evolved high-speed data only (1xEVDO). These requirements are defined to drive improvements to the fundamental packet data capabilities and efficiencies of cdma2000 1x systems to better meet the rapidly evolving needs of subscribers. This report is intended as a guide for wireless operators in the implementation of high-speed data-only systems beyond cdma2000 1x, to provide increased spectral efficiency and the capability to satisfy customer demand for wireless packet data applications.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0023 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0023 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-.R0023v1.0.pdf |

#### 10.4.20.1 S.R0023 – Version 2.0 – High-Speed Data Enhancements for cdma2000 1x – Data Only Stage 1 Requirements (5 December 2000)

This document outlines the key operator requirements for the evolution of the cdma2000 1x (current versions of C.S0001 through C.S0005) standard. This document will refer to this evolution as 1x evolved high-speed data only (1xEVDO). These requirements are defined to drive improvements to the fundamental packet data capabilities and efficiencies of cdma2000 1x systems to better meet the rapidly evolving needs of subscribers. This report is intended as a guide for wireless operators in the implementation of high-speed data-only systems beyond cdma2000 1x, to provide increased spectral efficiency and the capability to satisfy customer demand for wireless packet data applications.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0023 | 2.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-A.R0023(v.2.0) | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0023v2.0.zip |

### 10.4.21 S.R0024 – Version 1.0 – Wireless Local Loop Stage 1 Description (22 September 2000)

Wireless Local Loop (WLL) is a feature implementation using a serving system that utilizes a wireless connection to a wireless device, such as a mobile station or a network interface unit to provide local loop service to an end user. WLL permits local loop service for subscriber call origination and for receipt of calls. WLL applies to voice and data services. WLL provides signalling mechanisms between the serving system and the mobile station or the network interface unit. This signalling mechanism permits the exchange of call control information.

The essential signalling elements of WLL are:

- Mobile station or Network interface unit Device Type specification and request for WLL of the serving system or optional serving system Device Type specification;
- Mobile Station or Network interface unit Dial Tone or optional Dial Tone of the serving system;

- Mobile Station or Network interface unit Hook Status enabling WLL call control of the serving system;
- Serving system Autonomous Message Interval specification and request of the mobile station or the network interface unit or optional network interface unit Autonomous Message Interval specification;
- Serving system Call Waiting Indicator notification to the mobile station or the network interface unit.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0024 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0024 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0024v1.0.pdf |

### 10.4.22 S.R0025 – Version 1.0 – Wireless Pay Phone Stage 1 Description (22 September 2000)

Wireless Pay Phone is a public telecommunications service feature that allows mobile station support of pay phone applications. The Wireless Pay Phone feature is useful to subscribers that originate or receive calls at a pay phone.

The feature may be comprised of two signalling capabilities. The first signalling capability is that which allows a serving system to convey answer supervision. The second signalling capability is that which allows a serving system to meter calls.

NOTE – A serving system may convey answer supervision using Alert-signalled or Flash-signalled Line Control. A serving system may meter using Alert-signalled or Flash-signalled Meter Pulses.

Answer element of supervision is used by the mobile station to convey line polarity, which is useful as an answer supervision indication. Line Control specification and notification of the mobile station enables specification of Polarity Included, Toggle Mode, Reverse Polarity and Power Denial Time. These are specified in IS-95B section 7.7.5.15.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0025 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0025 v1.0 | 1.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0025v1.0.pdf |

### 10.4.23 S.R0026 – Version 1.0 – High-Speed Data Enhancements for cdma2000 1 x-Integrated Data and Voice Stage 1 Requirements (17 October 2000)

This document outlines the key operator requirements for the evolution of the cdma2000 1x (current versions of C.S0001 through C.S0005) standard. This document will refer to this evolution as 1x-evolved high-speed integrated data and voice (1xEV-DV). These requirements are defined to drive improvements to the fundamental packet data capabilities and efficiencies of cdma2000 1x systems to better meet the rapidly evolving needs of subscribers. This document is intended as a guide for 3GPP2 TSGs in the development of specifications for high-speed integrated data and voice systems beyond cdma2000 1x services (voice, fax, circuit switched data), to provide increased spectral efficiency and the capability to satisfy customer demand for wireless voice and packet data applications.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0026 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0026 | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0026.zip |

### 10.4.24 S.R0027 – Version 1 – Personal Mobility Stage 1 Requirements (8 December 2000)

The objective is to define and standardize the functionality of personal mobility that can be incorporated into the operations of both 2G/3G TIA/EIA-41 and 2G/3G GSM-derived wireless telecommunications networks. This document defines the requirements of personal mobility features and services.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0027 | 1 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0027 | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0027.zip |
| TTC | JP-3GB-S.R0027 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0027.pdf |

### 10.4.25 S.R0029 – Version 1.0.0 – Access Control Based on Call Type (22 September 2000)

This document defines requirements for the cdma2000 Air Interface to support Access Control based on Call Type (ACCT). ACCT provides the control of access attempt from mobile stations by service option or a set of service options.

Control for terminating calls to mobile stations are outside the scope of this feature description.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0029 | 1.0.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0029 v1.0.0 | 1.0.0 | Approved | 28-10-2002 | http://www.tta.or.kr/standardDB/stnfile/TTAE.3G-S.R0029v1.0.0.pdf |
| TTC | TS-3GB-S.R0029v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0029-v10.pdf |

### 10.4.26 S.R0032 – Version 1.0 – Enhanced Subscriber Authentication (ESA) and Enhanced Subscriber Privacy (ESP) (6 December 2000)

This document defines requirements for the cdma2000 Air Interface to support Enhanced Subscriber Authentication (ESA) and Enhanced Subscriber Privacy (ESP). ESA provides enhanced security in authentication and ESP provides enhanced privacy of user data.

Selection of cryptographic algorithms is outside the scope of this feature description.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0032 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-A.R0032 | 1 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0032.zip |
| TTC | JP-3GB-S.R0032 | 1 | TTC Published | 14-05-2001 | http://www.ttc.or.jp/imt2000/std/jpsr0032.pdf |

### 10.4.27 S.R0034 – Version 1.0 – User Identification Module ID Manufacturer's Code Assignment Guidelines and Procedures (18 April 2001)

These guidelines are based on the content of the ANSI TIA/EIA-41 "family of Standards" (e.g. AMPS (*EIA/TIA-535*), CDMA (*TIA/EIA-95* and *TIA/EIA/IS-2000*), and TDMA *(IS-54, IS-136*). It is recommended that systems which are based on the ANSI TIA/EIA-41 family of standards and which are deployed outside of the United States follow these guidelines.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWSTS-MC-S.R0034 | 1.0 | Published | -02-02 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0034 | 1.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0034.zip |
| TTC | TS-3GB-S.R0034v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0034-v10.pdf |

### 10.4.28 S.R0048 – Version 1.0 – 3G Mobile Equipment Identifier (MEID) (10 May 2001)

The objective is to define and standardize the structure of the 3G Mobile Equipment Identifier.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0048 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.R0048-0(V.1.0) | 1.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_R0048 v1.0.zip |
| TTC | TS-3GB-S.R0048v1.0 | 1 | TTC Published | 29-08-2001 | http://www.ttc.or.jp/imt2000/ts/tssr0048-v10.pdf |

### 10.4.29 S.S0028 – Version 1.0 – OAM&P for cdma2000 (3GPP Delta Specification) (18 April 2001)

This document contains the OAM&P requirements and interface definitions for cdma2000-based systems. It is an extension of operations and maintenance requirements, per latest 3GPP 32-series specifications capabilities to enable operation in a cdma2000 systems environment as part of the TIA/EIA/IS-2000 family of standards. They are in alignment with OAM&P Stage 1 IS-2000 requirements.

| Organi-zation | Document No. | Version | Status | Issued date | Location |
|---|---|---|---|---|---|
| CWTS | CWTS-MC-S.R0028 | 1.0 | Published | -02-2002 | http://www.cwts.org/itu/part2/MC1.htm |
| TTA | TTAE.3G-S.S0028(V.1.0) | 1.0 | Approved | 19-12-2001 | http://www.tta.or.kr/standardDB/stnfile/TTAE_3G-S_S0028v1.0.zip |
| TTC | JP-3GB-S.R0028v1.0 | 1 | TTC Published | 29-05-2001 | http://www.ttc.or.jp/imt2000/ts/tsss0028-v10.pdf |

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