3GPP2 SC.R2006-002-0
Version 2.0
8 August 2011

System Release Guide for the Release 6 of the cdma2000 System Specifications

Editor

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Revision History

Revision	Description of Changes	Date
v1.0	Publication	April 2011
v2.0	Updates to show publication of critical work item supporting document	August 2011

Table of Contents

FOREWORD

This forward is not part of this report.

This document is developed and maintained under the auspices of 3GPP2 TSG-S, the Technical Specifications Group (TSG) for Services and Systems Aspects for 3GPP2.

1. SCOPE

This document is the System Release Guide (SRG) for Release 6 of the 3GPP2 wireless telecommunication system.

1.1 Document Purpose

The objective of this document is to provide an informative overview for and reference to Release 6 of the 3GPP2 wireless telecommunication system (cdma2000®)[1] capabilities, features and services. This document is intended for use by persons and/or companies who are developing or deploying cdma2000 systems or by persons who are otherwise interested in 3GPP2 wireless telecommunications systems.

In order to be compliant with this 3GPP2 system release, mandatory features must be implemented. However, the set of optional features implemented in a given system is decided by the operators and manufacturers. The individual specifications indicate the mandatory and optional nature of features. This system release includes only features and capabilities that are part of a published 3GPP2 specification(s).

1.2 Release Summary

Release 6 focuses on the following release critical work items, as identified in blue in Table 1:

1.2.1 WLAN-cdma2000 1x Circuit-Switched Voice Interworking (3GPP2-00062-A)

Work Item 3GPP2-00062 “Wireless Local Area Network Interworking” and its associated stage-1, 2, and 3 development work (i.e., S.R0087-0 and X.P0028-0) specify the support for the following 3GPP2-WLAN Interworking scenarios:

#1 - Common Billing and Customer Care: No impact to 3GPP2 specifications.

#2 - 3GPP2 System-based Access Control and Charging and Access to the Internet via the WLAN system: Access to the 3GPP2 Home System for authentication, authorization and accounting to the 3GPP2 Home System.

#3 - Access to the 3GPP2 Packet Data Services via the WLAN system: Access to the 3GPP2 Home System for authentication, authorization, accounting, and access to the 3GPP2 Home System packet data services.

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[1] cdma2000® is a trademark for the technical nomenclature for certain specifications and standards of the Organizational Partners (OPs) of 3GPP2. Geographically (and as of the date of publication), cdma2000® is a registered trademark of the Telecommunications Industry Association (TIA-USA) in the United States.

#4 - Session continuity: The continuity of a packet data session while switching of network connection takes places between the available access systems (e.g., between a WLAN system and a 3GPP2 system, or between WLAN systems).

This work item is intended to extend the 3GPP2-WLAN Interworking capabilities as established by work item 3GPP2-00062 and specify the additional capability for supporting the WLAN-cdma2000 1x CS Voice Interworking. This will, in effect, define the support for a new scenario (#5) which can be described as follows:

#5 - Access to 3GPP2 Circuit-switched voice service & support of Handoff between WLAN and cdma2000 1x CS systems: The continuity of a 3GPP2 circuit -switched voice service while switching of network connection takes places between the available access systems (i.e., handing off between a VoIP call via a WLAN system and a circuit-based voice call via a 3GPP2 system).

1.2.2 3GPP2 System Enhancements for Femto and Picocell Support (3GPP2-00189)

Make enhancements to the cdma2000 air interface and core network standards to support operation in distributed configurations that operate in non-traditional radio environments, including (but not limited to) femto and picocells. The term “femtocell” is generally distinguished by the industry as providing service to existing cdma2000 mobile devices and being applicable to home (domestic) environments and operation in licensed spectrum. The term “pico cell” is generally distinguished from “femtocell” in that picocells are applicable to non-home environments (e.g., public hotspots, enterprises/businesses).

This includes enhancements to the core network architecture model to support large numbers of distributed radio access nodes (e.g., femto and picocells) that are connected to the cdma2000 core network over non-trusted All-IP networks.

Femto and picocells are attached to the system operator’s core network via an untrusted public or private IP-based network (e.g., cable or DSL internet service) and deliver cdma2000 services using cdma2000 air interface (radio) standards (1x, HRPD, and/or UMB[2]).

Specific aspects of the core network architecture that may need to be enhanced to provide femto and pico cell support include:

1. Support for large numbers of distributed radio access nodes (femto and picocells) that are connected to the cdma2000 core network over non-trusted All-IP networks through security gateways and the enhancement of the PDIF entity to serve as this security gateway.

[2] Ultra Mobile Broadband™ (UMB™) are trade and service marks owned by the CDMA Development Group (CDG).

2. All-IP based core network features may also need enhancements to support full hand-in, hand-out, rove-in, and rove-out between femto or picocells and the existing 1x and HRPD macro radio access networks. As is conventional in the femtocell market, the term "hand-in" means active handoff to the femtocell or picocell from the macro radio access network. The term "hand-out" means active handoff from the femto or pico device to the macro radio access network. "Rove in" means idle handoff to the femto or pico device from the macro radio access network. "Rove out" means idle handoff from the femto or pico device to the macro radio access network.

3. Some enhancements or interpretation/extension of existing specifications may be required to make supplementary services (e.g., SMS, three-way calling, etc.) and other ancillary services (e.g., LBS, E911, emergency services) operate in distributed networks that include non-traditional All-IP radio access nodes (such as femtocells and picocells that are connected to the cdma2000 core network over non-trusted All-IP networks).

Changes to the 1x, HRPD, and UMB air interface-related specifications may include enhancements to the air interfaces, minimum performance specifications, ancillary services, and other supporting standards to improve the system acquisition, performance, and operation in femto and picocells. Minimum performance specifications for 1x, HRPD, and UMB need to be updated to properly characterize requirements for special radio nodes targeted at non-traditional radio environments.

1.2.3 Support for 3GPP2 cdma2000 (HRPD and 1xRTT) and 3GPP E-UTRAN (LTE) Mobility Interworking and Inter-Technology Handoff (3GPP2-00195)

3GPP has informed 3GPP2 TSG-S that they have approved the following 3GPP2 requirements for mobility interworking between 3GPP2 and 3GPP:

- The evolved 3GPP system will support bidirectional service continuity between cdma2000 1xRTT Revision A and LTE.

- The evolved 3GPP system will support bidirectional service continuity between cdma2000 HRPD (1xEV-DO) Revision A and LTE for best effort and real-time applications.

- The evolved 3GPP system will support bidirectional service continuity between cdma2000 HRPD (1xEV-DO) Revision 0 and LTE for best effort applications.

The intent for this work item is to develop service continuity solutions to support mobility and handoff between 3GPP2 (1xRTT/HRPD) and 3GPP E-UTRAN (LTE). The solutions developed by 3GPP2 and 3GPP need to be consistent for the interworking aspects. 3GPP2 and 3GPP will need to coordinate the development of their specifications for these interworking solutions (e.g., via liaison activities). The following characteristics should be taken into account when developing solutions:

- The system will attempt to support the above mentioned mobility scenarios for terminals with single radio and dual radio solutions.

- The solution will attempt to aim for commonality in the solution for support of single radio and dual radio terminals.

- The solution will attempt to minimize the coupling between the E-UTRAN and the 3GPP2 accesses (e.g., by using transparent signaling through the source system) allowing independent protocol evolution in each access. The solution should not have any impact on deployed cdma2000 1xRTT Rev A and cdma2000 HRPD Rev 0 and Rev A terminals.

- The solution will attempt to be transparent to E-UTRA only terminal or network.

- Impact on service quality (e.g. QoS, interruption times will attempt to be minimized)

- Impact on legacy cdma2000 radio access technology is undesirable

- Impact on legacy cdma2000 CS core network is undesirable

1.2.4 Inter-Technology Handoff Support for HRPD-WiMAX (3GPP2-00196)

Create a solution that will support seamless inter-technology handoffs between HRPD and WiMAX in an active state. Specifically, create a general mechanism that:

- will allow a dual-mode terminal device to transition with minimal or no disruption of active services

- will support single and multiple radio terminal devices; and

- will support bi-directional tunnels between HRPD and WiMAX to support active state handoff for packet service continuity

1.2.5 Femto Security Framework (3GPP2-00215)

This work item is to specify a security framework for femto systems in cdma2000 networks. The proposed document will specify security architecture, methods and procedures between femtocells and a Security Gateway Function (SeGW) in the cdma2000 packet core network and any other system level security aspects.

The methods and procedures would include, but is not limited to:

- Authentication mechanisms

- Procedures for setting-up security associations/tunnels

- Security algorithms and profiles

1.2.6 Enhancement of the cdma2000 1x System (3GPP2-00218)

This work will enhance the cdma2000 1x air interface. The goals for this work item include significant increase of system capacity, especially for voice services, and better user experience.

1.2.7 1x and HRPD Base Station Minimum Performance Specifications for Femtocells (3GPP2-00233)

Very low power base stations provide a new opportunity to the 3GPP2 operators. However, these so-called femtocells also need special considerations when it comes to the performance specifications. This work creates new cdma2000 1x base station and HRPD access network minimum performance specifications specifically for femtocells to enable better performance and to reduce complexity of the development, deployment, and operation of these femtocells.

1.2.8 Enhanced System Selection (3GPP2-00238)

Modify or update document(s) (e.g., C.S0016 Over the Air Service Provisioning (OTASP)), to enhance system selection procedures. For example, specify Access Terminal (AT) system selection procedures to enable an AT to autonomously select sectors/carriers in its Preferred User Zone List (PUZL) even when such sectors/carriers are not advertised in Neighbor Lists.

2. DOCUMENT REFERENCES

The list of documents in the following three reference sections reflects the version of a document as of the original SRG publication date. Please review the 3GPP2 website (www.3gpp2.org) to find the latest published version of a document when implementing this release.

2.1 Normative References

A normative reference refers to the most recent version of each specification that supports the end-to-end features of the release.

A.S0008-C	v4.0	Interoperability Specification (IOS) for High Rate Packet Data (HRPD) Radio Access Network Interfaces With Session Control in the Access Network
A.S0009-C	v4.0	Interoperability Specification (IOS) for High Rate Packet Data (HRPD) Radio Access Network Interfaces with Session Control in the Packet Control Function
A.S0011-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 1 Overview (IOS v5.0)

A.S0012-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 2 Transport
A.S0013-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 3 Features
A.S0014-D	v1.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 4 (A1, A1p, A2 and A5 Interfaces) (IOS v5.0)
A.S0015-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 5 (A3 and A7 Interfaces) (IOS v5.0)
A.S0016-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 6 (A8 and A9 Interfaces)
A.S0017-D	v2.0	Interoperability Specification (IOS) for cdma2000 Access Network Interfaces - Part 7 (A10 and A11 Interfaces)
A.S0018-0	v1.0	Interoperability Specification (IOS) for MSC Pool Network
A.S0020-0	v2.0	Interoperability Specification (IOS) for Ultra Mobile Broadband (UMB) Radio Access Network Interfaces
A.S0021-0	v1.0	Inter-Technology Handoff for Ultra Mobile Broadband (UMB) Radio Access Network Interfaces
A.S0022-0	v2.0	Interoperability Specification (IOS) for Evolved High Rate Packet Data (eHRPD) Radio Access Network Interfaces and Interworking with Enhanced Universal Terrestrial Radio Access Network (E-UTRAN)
A.S0023-0	v1.0	Interoperability Specification (IOS) for High Rate Packet Data (HRPD) Radio Access Network Interfaces and Interworking with World Interoperability for Microwave Access (WiMAX)
A.S0024-0	v1.0	Interoperability Specification (IOS) for Femto Access Points
C.S0001-E	v2.0	Introduction to cdma2000 Spread Spectrum Systems
C.S0002-E	v2.0	cdma2000 PHY layer
C.S0003-E	v2.0	Medium Access Control (MAC) Standard for cdma2000 Spread Spectrum Systems
C.S0004-E	v2.0	Signaling Link Access Control (LAC) Standard for cdma2000 Spread Spectrum Systems
C.S0005-E	v2.0	Upper Layer (Layer 3) Signaling Standard for cdma2000 Spread Spectrum Systems
C.S0010-D	v2.0	Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations

C.S0011-D	v1.0	Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Mobile Stations
C.S0014-D	v3.0	Enhanced Variable Rate Codec, Speech Service Options 3, 68, 70, and 73 for Wideband Spread Spectrum Digital Systems
C.S0016-D	v1.0	Over-the-Air Service Provisioning of Mobile Stations in Spread Spectrum Standards
C.S0022-B	v2.0	Position Determination Service for Dual Mode Spread Spectrum Systems
C.S0023-D	v2.0	Removable User Identity Module for Spread Spectrum Systems
C.S0024-100-C	v1.0	Overview for cdma2000® High Rate Packet Data Air Interface Specification
C.S0024-200-C	v1.0	Physical Layer for cdma2000® High Rate Packet Data Air Interface Specification
C.S0024-300-C	v1.0	Medium Access Layer for cdma2000® High Rate Packet Data Air Interface Specification
C.S0024-400-C	v1.0	Connection and Security Layers for cdma2000 High Rate Packet Data Air Interface Specification
C.S0024-500-C	v1.0	Application, Stream and Session Layers for cdma2000® High Rate Packet Data Air Interface Specification
C.S0032-C	v1.0	Recommended Minimum Performance Standards for cdma2000 High Rate Packet Data Access Network
C.S0033-C	v1.0	Recommended Minimum Performance Standards for cdma2000 High Rate Packet Data Access Terminal
C.S0036-A	v1.0	Recommended Minimum Performance Specification for Position Determination Service for cdma2000 Spread Spectrum Systems
C.S0038-B	v1.0	Signaling Conformance Specification for High Rate Packet Data Air Interface
C.S0044-B	v1.0	Interoperability Specification for cdma2000 Air Interface
C.S0049-0	v3.0	Removable User Identity Module Conformance Testing for Spread Spectrum Systems
C.S0055-A	v1.0	Packet Switched Video Telephony Services (PSVT/MCS)
C.S0057-D	v1.0	Band Class Specification for cdma2000 Spread Spectrum Systems
C.S0058-B	v1.0	Over the Air Interoperability Specification for cdma2000 Air Interface

C.S0059-0	v1.0	Signaling Conformance Test Specification For cdma2000 Position Determination Services
C.S0063-A	v2.0	cdma2000 High Rate Packet Data Supplemental Services
C.S0064-A	v1.0	IP Based Over-the-Air Device Management (IOTA-DM) for cdma2000 Systems
C.S0065-B	v2.0	cdma2000 Application on UICC for Spread Spectrum Systems
C.S0066-0	v2.0	Over-the-Air Service Provisioning for MEID-Equipped Mobile Stations in Spread Spectrum Systems
C.S0067-A	v1.0	Key Exchange Protocols for cdma2000 High Rate Packet Data Air Interface
C.S0073-B	v1.0	Signaling Test Specification for Mobile Station Equipment Identifier (MEID) Support for cdma2000 Spread Spectrum Systems
C.S0074-A	v1.0	UICC-Terminal Interface Physical and Logical Characteristics for cdma2000 Spread Spectrum Systems
C.S0075-0	v1.0	Interworking Specification for cdma2000 High Rate Packet Data Systems
C.S0083-0	v1.0	Video Codec for 3GPP2 Packet Switched Multimedia Services - H.263
C.S0084-000-A	v1.0	Overview for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-001-0	v3.0	Physical Layer for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-002-0	v3.0	Medium Access Control Layer for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-003-0	v3.0	Radio Link Layer for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-004-0	v3.0	Application Layer for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-005-0	v3.0	Security Functions for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-006-0	v3.0	Connection Control Plane for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-007-0	v3.0	Session Control Plane for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-008-0	v3.0	Route Control Plane for Ultra Mobile Broadband (UMB) Air Interface Specification

C.S0084-009-0	v3.0	Broadcast-Multicast Upper Layer for Ultra Mobile Broadband (UMB) Air Interface Specification
C.S0084-011-0	v1.0	Physical Layer for Ultra Mobile Broadband (UMB) TDD Air Interface Specification
C.S0084-012-0	v1.0	Medium Access Control Layer Protocols for Ultra Mobile Broadband TDD (UMB-TDD) Air Interface Specification
C.S0085-A	v1.0	VoIP Codecs and Protocols
C.S0086-0	v1.0	Interworking Specification for cdma2000 High Rate Packet Data and WiMAX
C.S0087-0	v1.0	E-UTRAN – cdma2000 HRPD Connectivity and Inter-working Air Interface Specification
C.S0088-0	v1.0	Recommended Minimum Performance Standards for cdma2000 Ultra Mobile Broadband (UMB) Access Network
C.S0089-0	v1.0	Recommended Minimum Performance Standards for cdma2000 Ultra Mobile Broadband Access Terminal
C.S0090-0	v1.0	Test Application Specification for cdma2000 Ultra Mobile Broadband (UMB)
C.S0091-0	v1.0	Signaling Conformance Specification for Ultra Mobile Broadband Air Interface
C.S0093-0	v1.0	Highly Detectable Pilot Specification for the cdma2000 High Rate Packet Data Air Interface
C.S0094-A	v1.0	Signaling Conformance Test Specification for Interworking of cdma2000 1x and High Rate Packet Data Systems
C.S0095-0	v1.0	Signaling Test Specification for EUTRAN-cdma2000 Connectivity and Interworking
C.S0097-0	v2.0	E-UTRAN – cdma2000 1x Connectivity and Interworking Air Interface Specification
C.S0099-0	v1.0	Guidelines for using cdma2000 1x Revision E Features on Earlier Revisions
C.S0101-0	v1.0	Mobile Equipment (ME) Conformance Testing with CSIM for cdma2000 Spread Spectrum Standards
C.S0102-0	v1.0	Air Interface Application Layer Security for High Rate Packet Data Systems
C.S0103-0	v1.0	Header Compression for Extended Cell cdma2000 High Rate Packet Data System
S.S0028-E	v1.0	OAM&P for cdma2000
S.S0093-0	v3.0	cdma2000 Network Performance Measurement Types

S.S0132-0	v1.0	Femto Security Framework
S.S0127-0	v1.0	CAVE Based IMS Security
X.S0004-000-E	v10.0	Mobile Application Part (MAP) Introduction
X.S0004-321-E	v2.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Call Delivery
X.S0004-324-E	v2.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Calling Number Identification Presentation, Calling Number Identification Restriction
X.S0004-328-E	v2.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Mobile Access Hunting
X.S0004-333-E	v1.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Subscriber PIN Access, Subscriber PIN Intercept
X.S0004-334-E	v1.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Voice Message Retrieval
X.S0004-335-E	v1.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Calling Name Presentation, Calling Name Restriction
X.S0004-336-E	v1.0	Mobile Application Part (MAP) - Voice Feature Scenarios: Wireless Emergency Services
X.S0004-350 E	v1.0	Mobile Application Part (MAP) - Voice Feature Scenarios: MDN-Based Validation
X.S0004-372-E	v1.0	Mobile Application Part (MAP) - Border MSC SMS Scenarios
X.S0004-550-E	v4.0	Mobile Application Part (MAP): Parameters Signaling Protocols
X.S0004-630-E	v2.0	Basic Call Processing
X.S0008-0	v3.0	MAP Support for the Mobile Equipment Identity (MEID)
X.S0011-001-E	v1.0	cdma2000 Wireless IP Standard: Introduction
X.S0011-002-E	v1.0	cdma2000 Wireless IP Network Standard: Simple IP and Mobile IP Access Services
X.S0011-003-E	v1.0	cdma2000 Wireless IP Network Standard: Data Mobility and Resource Management
X.S0011-004-E	v1.0	cdma2000 Wireless IP Network Standard: Quality of Service and Header Reduction
X.S0011-005-E	v1.0	cdma2000 Wireless IP Network Standard: Accounting Services and 3GPP2 RADIUS VSAs
X.S0011-006-E	v1.0	cdma2000 Wireless IP Network Standard: PrePaid Packet Data Service

X.S0011-002-D	v2.0	cdma2000 Wireless IP Network Standard: Simple IP and Mobile IP Access Services
X.S0013-004-B	v1.0	All-IP Core Network Multimedia Domain: IP Multimedia Call Control Protocol Based on SIP and SDP Stage 3
X.S0013-005-B	v1.0	All-IP Core Network Multimedia Domain: IP Multimedia Subsystem Cx Interface Signaling Flows and Message Contents
X.S0013-006-B	v1.0	All-IP Core Network Multimedia Domain: Cx Interface Based on the Diameter Protocol; Protocol Details
X.S0028-000-A	v1.0	cdma2000 Packet Data Services – Wireless Local Area Network (WLAN) Interworking – List of Parts
X.S0028-200-A	v1.0	cdma2000 Packet Data Services – Wireless Local Area Network (WLAN) Interworking – Access to Operator Service and Mobility
X.S0040-0	v1.0	PPP-Alternative Protocol (AltPPP) for cdma2000 Wireless IP Network Standard
X.S0042-A	v1.0	Voice Call Continuity Between IMS and Circuit Switched Systems
X.S0047-0	v1.0	Mobile IPv6 Enhancement
X.S0048-0	v1.0	Short Message Service Over IMS
X.S0053-0	v1.0	All-IP System - MMD Policy Enhancements
X.S0054-000-A	v1.0	CAN Wireless IP Network Overview and List of Parts
X.S0054-100-0	v2.0	Basic IP Services for CAN
X.S0054-102-0	v2.0	Multiple- Authentication and Legacy Authentication Support for Converged Access Network
X.S0054-110-0	v2.0	MIPv4 Specification in Converged Access Network
X.S0054-220-A	v1.0	Network PMIP Support
X.S0054-610-0	v1.0	UMB and HRPD/1x Interworking
X.S0054-910-A	v1.0	CAN Data Dictionary
X.S0055-0	v1.0	MMD Supplementary Service
X.S0057-A	v1.0	E-UTRAN - HRPD Connectivity and Interworking: Core Network Aspects
X.S0058-0	v2.0	WiMAX - HRPD Interworking: Core Network Aspects
X.S0059-000-0	v1.0	Femto Network Overview and List of Parts
X.S0059-100-0	v1.0	Femto Network Specification

X.S0059-200-0	v1.0	1xRTT Femto Access Point Service Specification
X.S0061-0	v1.0	Network PMIP Support
X.S0062-0	v1.0	Policy and Charging Control (PCC) for cdma2000 1x and HRPD
X.S0063-0	v1.0	Femtocell Configuration Parameter
X.S0064-0	v1.0	cdma2000 SMS/IM Interworking

2.2 Informative References

An informative reference refers to the most recent version of each report that supports the end-to-end features of the release.

C.R0022-B	v2.0	Position Determination Service for cdma2000 Spread Spectrum Systems Software Distribution
C.R1001-G	v1.0	Administration of Parameter Value Assignments for cdma2000 Spread Spectrum Standards
C.R1002-B	v1.0	cdma2000 Evaluation Methodology
C.R1010-0	v1.0	Software Distribution for H.263 Video Codec for 3GPP2 Packet Switched Multimedia Services
C.R1012-0	v1.0	Ultra Mobile Broadband (UMB) Performance Analysis
S.R0005-B	v2.0	Network Reference Model for Cdma2000 Spread Spectrum Systems
S.R0006-000-A	v2.0	Wireless Features Description
S.R0006-807-A	v1.0	Wireless Features Description: Generic Broadcast Teleservice Transport Capability: Network Perspective
S.R0006-808-A	v1.0	Wireless Features Description Circuit-Switched Call Precedence Over CDMA Packet Data Session
S.R0006-A	v1.0	Wireless Features Description
S.R0037-B	v2.0	IP Network Architecture Model for cdma2000 Spread Spectrum Systems
S.R0087-A	v1.0	WLAN Interworking
S.R0079-A	v1.0	End-to-End QoS Stage 1
S.R0105-0	v1.0	Hot-Lining Service (Packet Data) - Stage 1 Requirements
S.R0106-A	v1.0	Packet-Switched Video Telephony - Stage 1 Requirements
S.R0108-0	v2.0	HRPD-cdma2000 1x Interoperability for Voice and Data System Requirements

S.R0113-0	v2.0	cdma2000 Enhanced Packet Data Air Interface System - System Requirements Document
S.R0115-0	v2.0	All-IP Network Emergency Call Support - Stage 1 Requirements
S.R0117-A	v1.0	Multimedia Priority Services Stage 1
S.R0120-0	v1.0	All-IP System – MMD Policy Enhancements – System Requirements
S.R0123-0	v1.0	Enhanced MMD Security – Stage 1 Requirements
S.R0124-0	v2.0	Ultra Mobile Broadband Network Architecture Model
S.R0125-502-0	v1.0	VoIP Supplementary Services Description: Call Forwarding - Busy
S.R0125-503-0	v1.0	VoIP Supplementary Services Description: Call Forwarding - Default
S.R0125-504-0	v1.0	VoIP Supplementary Services Description: Call Forwarding - No Answer
S.R0125-505-0	v1.0	VoIP Supplementary Services Description: Call Forwarding - Unconditional
S.R0125-506-0	v1.0	VoIP Supplementary Services Description: Call Transfer
S.R0125-507-0	v1.0	VoIP Supplementary Services Description: Call Waiting
S.R0125-508-0	v1.0	VoIP Supplementary Services Description: Calling Identification Presentation
S.R0125-509-0	v1.0	VoIP Supplementary Services Description: Calling Identification Restriction
S.R0125-512-0	v1.0	VoIP Supplementary Services Description: Flexible Alerting
S.R0125-513-0	v1.0	VoIP Supplementary Services Description: Message Waiting Indication
S.R0125-522-0	v1.0	VoIP Supplementary Services Description: Three-Way Calling
S.R0125-551-0	v1.0	VoIP Supplementary Services Description: Abbreviated Dialing (AD)/Short Code Dialing
S.R0125-552-0	v1.0	VoIP Supplementary Services Description: Call Hold
S.R0125-553-0	v1.0	VoIP Supplementary Services Description: Customized Ring Back Tone
S.R0125-554-0	v1.0	VoIP Supplementary Services Description: Directory Assistance
S.R0125-555-0	v1.0	VoIP Supplementary Services Description: Inbound Call Restrictions/Anonymous Call Rejection

S.R0125-556-0	v1.0	VoIP Supplementary Services Description: Outbound Call Restrictions
S.R0125-558-0	v1.0	VoIP Supplementary Services Description: Terminating Identification Presentation
S.R0125-559-0	v1.0	VoIP Supplementary Services Description: Terminating Identification Restriction
S.R0125-562-0	v1.0	VoIP Supplementary Services Description: Voice Mail Retrieval
S.R0126-0	v1.0	System Enhancements for Femto and Picocells
S.R0128-0	v1.0	HRPD and WIMAX Inter-Technology Hand-Off Stage 1 Requirements
S.R0129-A	v2.0	HRPD/1xRTT and 3GPP E-UTRAN (LTE) Interworking and Inter-Technology Handoff Stage 1 Requirements
S.R0135-0	v1.0	Femtocell System NAM
S.R0136-0	v2.0	System Requirements for MSC Pool
S.R0137-0	v1.0	Common IMS Impact to 3GPP2 Specifications
S.R0138-0	v1.0	eHRPD Security Framework
S.R0139-0	v1.0	Femtocell Systems Overview for cdma2000 Wireless Communication Systems
SC.R5003-0	v1.0	3GPP2 Vision for 2009 and Beyond

2.3 Supplemental References

A supplemental reference refers to the most recent version of each document (specification or report) that has been published since the previous 3GPP2 release, but for which its associated end-to-end feature(s) has not been released.

A.S0018-0	v1.0	MSC Pool
A.S0023-0	v1.0	Interoperability Specification (IOS) for High Rate Packet Data (HRPD) Radio Access Network Interfaces and Interworking with World Interoperability for Microwave Access (WiMAX)
C.S0017-003-A	v1.0	Data Service Options for Spread Spectrum Systems: AT Command Processing and the Rm Interface
C.S0017-004-A	v1.0	Data Service Options for Spread Spectrum Systems: Async Data and Fax Services
C.S0033-B	v1.0	Recommended Minimum Performance Standards for for cdma2000 High Rate Packet Data Access Terminal

C.S0055-A	v1.0	Packet Switched Video Telephony Services (PSVT/MCS)
C.S0064-0	v2.0	IP Based Over-the-Air Device Management (IOTA-DM) for cdma2000 Systems
C.S0070-0	v1.0	BCMCS Codecs and Transport Protocols
S.R0094-0	v1.0	Rm Interface Enhancements for cdma2000 - System Requirements
S.R0103-0	v1.0	Network Firewall Configuration and Control - NFCC, Stage 1 Requirements
S.R0106-A	v1.0	Packet-Switched Video Telephony - Stage 1 Requirements
S.R0119-0	v1.0	Proximity Mobile Gateway
S.R0130-0	v1.0	Interworking and Inter-Technology Handoff for UMB and UTRA/E-UTRA Technologies Stage 1
S.R0131-0	v1.0	IMS Centralized Services – Stage 1 Requirements
S.R0133-0	v1.0	Call Localization Management
S.R0134-0	v1.0	Evolution of Ultra Mobile Broadband System Requirements Document
S.R0142-0	v1.0	Emergency Call Call-Back Stage 1 Requirements
S.S0028-E	v1.0	OAM&P for cdma2000
S.S0053-0	v2.0	Common Cryptographic Algorithms
S.S0093-0	v3.0	cdma2000 Network Performance Measurement Types
S.S0127-0	v1.0	CAVE Based IMS Security
X.S0044-0	v1.0	Mobile IPv4 Enhancements

3. System Release Content and Feature Description

The features and capabilities provided by this cdma2000 system release are listed in Table 1, specifically the new and enhanced features added since the publication of SC.R2005-002-0 v3.0: System Release Guide for the Ultra Mobile Broadband-1 (UMB™ -1) release of the cdma2000 System Specifications. For the list of features in 3GPP2 UMB-1 release, please refer to SC.R2005-002-0 v3.0.

Please note that Table 1 lists all versions of each document (specification or report) that support the features for this new release. Release critical work items are indicated in blue.

Table 1 – Features Supported by this Release

Work Item Number	Feature Name	Description	Specs & Reports (The latest version supersedes previous versions)
00019-A	Revision E Integration (Rev A)	Consolidation of a number of stand-alone standards approved since the publication of N.S0005-0 (ANS-41-D) into a new revision of the document to be published as multipart document in the series X.S0004-NNN-A (ANS-41 Rev E).	X.S0004-000-E v8.0, X.S0004-000-E v8.0, X.S0004-321-E v2.0, X.S0004-324-E v2.0, X.S0004-328-E v2.0, X.S0004-333-E v1.0, X.S0004-334-E v1.0, X.S0004-335-E v1.0, X.S0004-336-E v1.0, X.S0004-350 E v1.0, X.S0004-372-E v1.0, X.S0004-550-E v1.0
00050-A	End-to-End Internet Protocol Quality of Service	Extend the 3GPP2 End-to-End QoS WI (3GPP2-00050) to include recommended guidelines for the use of IP QoS Classes as defined in the IETF Internet Draft - "Configuration Guidelines for DiffServ Service Classes	A.S0008-B v2.0, A.S0008-C v2.0, A.S0009-B v2.0, A.S0009-C v2.0, A.S0012-C v2.0, S.R0079-A v1.0, X.S0011-001-E v1.0, X.S0011-002-E v1.0, X.S0011-003-E v1.0, X.S0011-004-E v1.0, X.S0011-005-E v1.0, X.S0011-006-E v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00051-A	1xEV-DV Capabilities - Revision A	This feature provides high rate packet data transmission to the mobile station, simultaneously with voice service, at up to 3 Mbps in a single 1.25 MHz CDMA carrier. 1xEV-DV provides simultaneous voice service and packet data services at up to 3 Mbps on the forward link. Services included are: concurrent voice and data services, access authentication, data delivery, session handoff, and status management. Please note that a protocol revision of MOB_P_REV 9 defines a mobile station that complies with all the requirements specified in 1xEV-DV, except those pertaining to AKA and Message Integrity. MOB_P_REV 10 complies with all requirements specified in 1xEV-DV.	A.S0011-D v1.0, A.S0012-D v1.0, A.S0013-D v1.0, A.S0014-D v1.0, A.S0015-D v1.0, A.S0016-D v1.0, A.S0017-D v1.0, C.S0010-D v1.0, C.S0011-D v1.0
00058-A	Security Framework for Data Services via HRPD	Establishes a security framework for packet data via HRPD. General security requirements are described, including security features supporting authentication, key distribution/management, confidentiality and integrity. Access network security mechanisms based on a security model are also a part of this document and along the lines of 3GPP TS33.102 and other relevant specifications/RFCs.	A.S0008-B v2.0, A.S0008-C v2.0, A.S0009-B v2.0, A.S0009-C v2.0
00061-A	Standardized cdma2000 Performance Measurement Types		S.S0093-0 v3.0
00062-A	WLAN-3G1x Circuit-Switched Voice Interworking	Extend the WLAN Interworking WI (00062) to allow access to 3GPP2 circuit-switched voice service & support of handoff between WLAN and 3G1x CS systems.	S.R0037-A v1.0, S.R0087-A v1.0, X.S0028-000-A v1.0, X.S0028-200-A v1.0, X.S0042-0 v1.0, X.S0048-0 v1.0
00067-B	Voice Over IP (VoIP) - Phase II - Revision A		A.S0008-B v2.0, A.S0009-B v2.0
00074-A	Enhancements to IP based over-the-air Device Management.	To enhance IP based over-the-air (IOTA) Device Management (DM) through enhancement and bug fixes, especially to resolve interoperability issues and other enhancements related to defining any CDMA specific Management Objects (MOs).	A.S0013-C v2.0, C.S0064-A v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00080	Signaling Reduction Between the MS and PDSN	The purpose is to reduce the signaling exchange between the MS and the PDSN and speed up the packet data session setup time and conserve battery power.	X.S0011-D v1.0, X.S0011-D v2.0
00081	IPv6 Mobility Support	In 3GPP2 wireless IP network, there is a need to provide seamless network connectivity to mobile users using IPv6. The purpose of this work item is to provide required Mobility support for IPv6.	X.S0011-D v1.0, X.S0011-D v2.0
00083	Hotlining Capability	In 3GPP2 wireless IP network, there is a need to detect and prevent unauthorized use of network resources. The proposed feature includes but is not limited to the following: a. Method to send signal between PDSN/FA or the HA and the HAAA for an active packet data session, b. Method to send signal between PDSN/FA or the HA and the HAAA for a new packet data session.	S.R0105-0 v1.0, X.S0011-D v1.0, X.S0011-D v2.0, X.S0011-E v1.0
00086	DHCP and DHCPv6 Support	The DHCP support is needed to configure the MS.	S.R0037-A v1.0, S.R0037-B v1.0, X.S0011-D v1.0
00094-A	HRPD-cdma2000 1x Interoperability for Voice and Data	Addresses HRPD and cdma2000-1x network interoperability by providing flexibility in the selection of the network (cmda2000-1x or HRPD) to support a voice call to/from a MS/AT. The determination of which network (cdma2000-1x or HRPD) serves the mobile may depend on if the MS/AT has a dormant or active data session when a voice call is originated/terminated. Also enable voice and data call (including Video Telephony) handoffs between HRPD and cdma2000-1x networks.	A.S0008-B v2.0, A.S0008-C v2.0, A.S0009-B v2.0, A.S0009-C v2.0
00097	cdma2000 Evaluation Methodology (C.R1002-A) Development	cdma2000 Evaluation Methodology (C.R1002-A) Development (Strawman Revision A)	C.R1002-A v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00098	Performance Characterization of Multimedia Streaming Services (MSS)	Create performance characterization technical report for Multimedia Streaming Services.	C.R1002-0 v1.0
00114	Enhanced cdma2000 System Requirements Document	System Requirements Document of Enhanced cdma2000 Packet Data Air Interface Performance Requirements and Primary Technology Strategies as an Evolution to the HRPD system.	A.S0020-0 v1.0, A.S0020-0 v2.0, S.S0113-0 v1.0, S.R0113-0 v2.0
00115	Support for Cross Notification on cdma2000 1x for Alternate Technologies	Creation of a specification to describe the behavior for Cross Notification to a mobile station on 3G1x for a connection on an Alternate Technology.	A.S0021-0 v1.0, C.S0075-0 v1.0, S.R0087-A v1.0, S.R0108-0 v1.0, S.R0108-0 v2.0
00117-A	MEID for Pre Rev D cdma2000 - Revision		X.S0008-0 v3.0
00122	Band Class Cleanup	Band Class Specification (C.S0057) was published in February 2004. When a new band class or band subclass needs to be added, ideally only C.S0057 should change and most of the other specifications should not be affected. We need to make sure other specifications in TSG-C do not have band class or band subclass definitions included, but rather refer to C.S0057.	A.S0014-C v2.0, C.S0016-D v1.0, C.S0057-A v1.0, C.S0057-B v1.0
00123	Enhancements to Mobile IPv6 (MIP6) service & security support	This work item covers the following enhancements to the support of MIP service & security: (1) IPsec/IKEv2: Include use of IETF RFCs for IPsec and IKEv2 in packet data networks to secure Mobile IPv6 sessions. (2) MIP6 bootstrapping enhancement: Include use of IETF RFCs to enhance the support of Mobile IPv6 bootstrapping.	X.S0047-0 v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00130	HRPD Emergency Call Support	With the introduction of Voice over Internet Protocol (VoIP) support for High Rate Packet Data (HRPD), emergency call support shall be added to HRPD.	A.S0008-C v2.0, A.S0009-C v2.0, C.S0024-B v2.0, C.S0024-B v3.0, C.S0063-A v2.0, S.R0115-0 v1.0, S.R0115-0 v2.0, X.S0049-0 v1.0, X.S0060-0 v1.0
00133	Alternate PPP Protocol Support	A new mechanism to setup the data-link layer between the mobile and the PDSN in a CDMA2000 network that will significantly improve call setup time.	A.S0008-C v2.0, A.S0009-C v2.0, X.S0040-0 v1.0
00134	Priority Service for Next Generation Networks (PS-NGN)	This work item proposes that 3GPP2 initiate efforts to define mechanisms that provide priority access to, preferential treatment through, and egress from networks to authorized users who make calls (VoIP, data/multimedia) during times of network congestion. The work includes definition of radio link layer priority mechanisms. While solutions exist in circuit switched networks, it is important to ensure that such services continue to be provided in Next Generation Networks (NGN).	A.S0008-C v2.0, A.S0009-C v2.0, A.S0020-0 v1.0, A.S0020-0 v2.0, C.S0024-B v2.0, C.S0024-B v3.0, S.R0117-0 v1.0, S.R0117-A v1.0
00144-A	MSC Pool	MSC Pool allows one BSC to connect to multiple MSCs. However, the association of one BSC to one MSC is maintained for the life of an MS service connection. The purpose of MSC Pool support is to achieve load balance/re-distribution and improve reliability with minimum change to the BSC and the MSC.	A.S0018-0 v1.0, S.R0037-B v2.0 , S.R0136-0 v1.0, S.R0136-0 v2.0
00152	Revision B of Signaling Conformance Specification to Support HRPD Rev. B and BCMCS Rev. A.	C.S0038-B, Signaling Conformance Specification for cdma2000 High Rate Packet Data Specification Revision B (C.S0024-B) and cdma2000 High Rate Broadcast/Multicast High Rate Packet Data Air Interface Specifications Revision A (C.S0054-A)	C.S0038-B v1.0
00153	Point Release of Over-the-Air Service Provisioning Specification	Point Release for C.S0016-C v1.0	C.S0016-D v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00157	Point Releases to the minimum performance standards for cdma2000 MS and BS to include Band Class 13 and other needed changes	Point Release for C.S0010-C v2.0 and C.S0011-C v2.0	C.S0010-C v2.0, C.S0011-C v2.0
00159-A	Enhanced cdma2000 Air Interface - Revision A	Revision A of the enhanced cdma2000 air interface.	A.S0020-0 v2.0 C.R1012-0 v1.0 S.R0124-0 v2.0 X.S0054-000-0 v2.0 X.S0054-100-0 v2.0 X.S0054-102-0 v2.0 X.S0054-110-0 v2.0 X.S0054-220-0 v2.0 X.S0054-910-0 v2.0
00167	Security Enhancements for 3GPP2 Networks	Security enhancements will enable a more secure end-to-end system, enabling operators to continuously monitor for anomalies, take a defensive posture to prevent attacks, and to rapidly respond to incidents. This WI will specify the security architecture and protocols to a sufficient level of detail.	S.R0037-A v1.0, S.R0037-B v1.0, S.R0123-0 v1.0
00168	IMS security for 2G R-UIMs	This WI proposes supporting 2G R-UIM access to IMS (based on C.S0023-B or before). 2G R-UIMs support CAVE-based authentication, not AKA-based authentication.	S.S0127-0 v1.0, X.S0013-004-B v1.0, X.S0013-005-B v1.0, X.S0013-006-B v1.0
00170	MMD Policy Enhancements	MMD Policy Enhancements will extend current methods for operators to use policy-based controls to manage their network resources, and to enable policy exchange with other operators for roaming subscribers.	S.R0120-0 v1.0, X.S0053-0 v1.0
00172	H.263 Video Codec for 3GPP2 Multimedia Services	This work item creates the technical specification(s) and technical reports necessary for utilizing the H.263 video codec for 3GPP2 packet-switched multimedia services.	C.S0083-0 v1.0, C.R1010-0 v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00173	A-GALILEO Support	Specify a new revision of C.S0022 to enable Assisted GALILEO (A-GALILEO) positioning support.	C.S0022-B v1.0
00176	Modifications to Band Classes to Support Enhanced cdma2000 Air Interface	Modifications to band classes to support Enhanced cdma2000 air interface	C.S0057-C v1.0, X.S0004-630-E v2.0
00181	Simultaneous Services Enhancements	This work item describes enhancements to the Simultaneous Services specification X.S0011-002-D v1.0 Chapter 6.	X.S0011-002-D v2.0
00182	Miscellaneous Enhancements to the IP Multi-Media Domain (MMD)	This WI includes the following miscellaneous enhancements to MMD to meet operators' requirements.	X.S0042-A v1.0
00183-A	VoIP Codecs and Protocols	Recommends VoIP codecs and protocol configuration for IMS compliant terminals attached via an HRPD access network.	C.S0085-A v1.0
00185	Band Class Enhancement to Support 700MHz Public Safety Band	Band Class Enhancement to support 700 MHz public safety band	C.S0057-C v1.0
00187	Enhancements to Packet Switched Video Telephony Services Specification	1. Provide support for video adaptation based on radio link and loading conditions. 2. Include support for wideband Rate Set 1 speech codecs 3. Provide service level support for PSVT-HRPD to Voice-1x hand down. 4. Provide procedures for efficient end-to-end QoS negotiation	A.S0008-B v2.0, A.S0008-C v2.0, A.S0009-B v2.0, A.S0009-C v2.0, C.S0016-C v2.0, C.S0023-C v2.0, C.S0055-A v1.0, C.S0065-0 v2.0, C.S0066-0 v2.0, S.R0106-A v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00189	3GPP2 System Enhancements for Femto and Picocell Support	Make enhancement to the cdma2000 family of standards to support functionality necessary to operate 1x, HRPD, and UMB in femto (very small, targeted to home or commercial users) and pico (small, targeted to commercial users) base stations.	A.S0024-0 v1.0, C.S0016-D v1.0, S.R0037-B v1.0, S.R0126-0 v1.0, S.R0135-0 v1.0, S.R0139-0 v1.0, X.S0059-000-0 v1.0, X.S0059-100-0 v1.0, X.S0059-200-0 v2.0, X.S0063-0 v1.0
00190	Supplementary Services for VoIP in MMD	This WI proposes new work on supporting supplementary services for VoIP in MMD.	S.R0125-0 v1.0, X.S0055-0 v1.0
00195	Support for 3GPP2 cdma2000 (HRPD and 1xRTT) and 3GPP E-UTRAN (LTE) Mobility Interworking and Inter-Technology Handoff	This work item provides support for HRPD - E-UTRAN and 1xRTT - E-UTRAN handoff and mobility interworking.	A.S0008-C v3.0, A.S0009-C v3.0, A.S0022-0 v1.0, A.S0022-0 v2.0, C.R1001-G v1.0 , C.S0067-A v1.0, S.R0138-0 v1.0, S.R0129-0 v1.0, X.S0042-A v1.0, X.S0057-0 v1.0, X.S0057-0 v2.0, X.S0057-A v1.0
00196	Inter-Technology Handoff Support for HRPD-WiMAX	Develop new interface and protocol for inter-technology handoff between HRPD and WiMAX	C.S0086-0 v1.0, S.R0128-0 v1.0, X.S0058-0 v1.0, X.S0058-0 v2.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00197	Development of Minimum Performance Requirements, Signaling Conformance Requirements, and Interoperability Test Requirements for the UMB Devices and Air Interface	Develop UMB test requirements and procedures.	C.S0088-0 v1.0, C.S0089-0 v1.0, C.S0090-0 v1.0, C.S0091-0 v1.0
00198	Administration of Parameter Value Assignments	Assign and document values for parameters defined within certain cdma2000 standards.	C.R1001-G v1.0
00201	Position Support for UMB	Update position location by including procedures for UMB.	C.S0022-B v1.0
00202	Duplex Option for UMB	This work item enhances the UMB air interface to include more duplex options.	C.S0084-011-0 v1.0, C.S0084-012-0 v1.0, C.S0084-000-A v1.0
00203	UMB System Selection	Make enhancement to system selection procedure to support UMB system selection.	C.S0016-D v1.0, C.S0023-D v1.0, C.S0064-A v1.0, C.S0065-A v1.0
00206	Enhancement of Positioning for HRPD Access Terminals	This work enables enhancement of positioning for HRPD access terminals via the forward link.	C.S0093-0 v1.0
00207	Band Class Enhancement to Support 850 & 895 MHz North America Air-to-Ground (ATG) Band	Band Class Enhancement to support Air-to-Ground Communications utilizing US FCC approved spectrum; Forward Link- BTS to Aircraft and Reverse Link Aircraft to BTS.	C.S0057-C v1.0
00208	Additional GNSS and HDP support	Specify a new revision of C.S0022 to enable additional GNSS and HDP positioning support.	C.R0022-B v1.0, C.S0022-B v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00209	Signaling Conformance Test Specification for Interworking of cdma2000 1x and High Rate Packet Data Systems	This work item is to create a signaling conformance test specification cdma2000 1x and HRPD interworking defined in C.S0075.	C.S0094-0 v0.8, C.S0094-A v1.0
00210	Minimum Performance Specifications (MPS) Update Due to Changes from Band Class Specification	Point release of C.S0010-C, C.S0011-C, C.S0032-B and C.S0033-B to include 1) band classes as per C.S0057-C (Band Class specification) currently not supported in the mentioned minimum performance specifications (MPS)	C.S0010-D v1.0, C.S0011-D v1.0, C.S0032-C v1.0, C.S0033-C v1.0
00211	UMB Air Interface Point Release	This work item fixes bugs found in UMB air interface.	A.S0020-0 v2.0, C.S0084-0 v3.0
00212	MEID/EUIMID related changes in OTASP, R-UIM and CSIM Specifications	Correction of a few MEID/EUIMID related bugs by means of an addendum of C.S0016-C, C.S0066-0, C.S0023-C and C.S0065-0.	C.S0016-C v2.0, C.S0023-C v2.0, C.S0065-0 v2.0, C.S0066-0 v2.0, C.S0073-B v1.0
00213	Enhancements to HRPD Air Interface	This work item enhances the HRPD Air Interface to improve support for a range of services and applications.	C.S0024-100-C v1.0, C.S0024-200-C v1.0, C.S0024-300-C v1.0, C.S0024-400-C v1.0, C.S0024-500-C v1.0
00214	3GPP2 Vision Document for 2009 and Beyond	High level description of direction and focus for 3GPP2 in evolving wireless communication features and capabilities for 2009 and beyond.	SC.R5003-0 v1.0
00216	PMIP Support in 1x/HRPD	This work item supports PMIP for cdma2000 networks.	X.S0061-0 v1.0
00217	Signaling Conformance Test Specification for Interworking of cdma2000 1X High Rate Packet Data and Long Term Evolution Systems	This work item is to create signaling conformance test procedures and requirements to support C.S0087-0, Interworking specification for cdma2000 1X, High Rate Packet Data and Long Term Evolution systems.	C.S0095-0 v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00218	Enhancement of the cdma2000 1x System	This work enables enhancement of the cdma2000 1x system for higher capacity and better user experience.	A.S0011-A.S0017-D v2.0, C.S0001-E v1.0, C.S0002-E v1.0, C.S0003-E v1.0, C.S0004-E v1.0, C.S0005-E v1.0
00219	Support for 3GPP2 HRPD Rev. B and 3GPP E-UTRAN (LTE) Mobility Interworking and Inter-Technology Handoff	This work item provides support for HRPD Rev. B - E-UTRAN handoff and mobility interworking.	C.S0087-0 v1.0, S.R0129-A v1.0, S.R0129-A v2.0
00220	Point Release for HRPD Rev. B	This work results in a new point release of HRPD Rev. B.	C.S0024-B v3.0
00221	1x Circuit Switch Fall Back in cdma2000 System	This work creates a new specification to define cdma2000 1x upper layer aspects to support 1x CSFB from E-UTRAN.	C.S0097-0 v1.0
00222	Update of Smart Card Specs to Support CDG OMH (Open Market Handsets) Initiative	Smart Card Specs Update for CDG OMH	C.S0023-D v1.0, C.S0065-A v2.0, C.R1001-G v1.0
00226	Modification of Band Class Specifications	This work will address modifications to the definition of some spectrum by adding subclasses to existing band classes or introducing new band classes as appropriate.	C.S0057-D v1.0
00227	IP Service Authorization Support in cdma2000 Packet Data Network	Introduce IP Service Authorization Support in X.P0011-E.	X.S0011-001-E v1.0, X.S0011-002-E v1.0, X.S0011-003-E v1.0, X.S0011-004-E v1.0, X.S0011-005-E v1.0, X.S0011-006-E v1.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00228	EAP Support for Access Authentication in cdma2000 Packet Data Network	Introduce EAP Support in X.P0011-E.	A.S0008-C v3.0, A.S0009-C v3.0, X.S0011-001-E v1.0, X.S0011-002-E v1.0, X.S0011-003-E v1.0, X.S0011-004-E v1.0, X.S0011-005-E v1.0, X.S0011-006-E v1.0
00229	Network-initiated QoS Support in cdma2000 Packet Data Network	Introduce network-initiated QoS Support in X.P0011-E.	X.S0062-0 v1.0
00233	1x and HRPD Base Station Minimum Performance Specifications for Femto Cells	This work creates minimum performance specification for very low power cdma2000 1x and HRPD base stations also known as femto cells. The goal is to enable better performance and to reduce complexity of the development, deployment, and operation of these femto cells.	C.S0010-D v1.0, C.S0032-C v1.0
00235	Modification of Band Class Specifications for L-Band (ATC)	This work will address modifications to the 3GPP2 Band Class specification to support L-Band.	C.S0057-D v1.0
00237	Enhancement of Air Interface Evaluation Methodology	Enhancement of the cdma2000 air interface Evaluation Methodology to support evaluation of more realistic cdma2000 deployment scenarios and channel models.	C.R1002-B v1.0
00238	Enhanced System Selection	Make enhancement to system selection procedure, e.g., Preferred User Zone List (PUZL) procedures to enhance the ability to deploy embedded radio network nodes (e.g., micro/pico/femto cells) without requiring modification to the Macro system.	C.S0016-D v1.0
00240	Bug fixes for Access Terminal Minimum Performance Standards for cdma2000 High Rate Packet Data	Address bug-fixes and missing requirements in Rev. B of the AT MPS.	C.S0033-B v2.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00241	Interworking between the Short Messaging Services and OMA Instant Messaging	This WI proposes new work on Service Level Interworking between OMA Instant Messaging and Short Messaging Services.	X.S0064-0 v1.0
00243	Bug-fixes for MPS for Position Determination Service	Bug-Fixes for MPS for Position Determination Service	C.S0036-0 v2.0
00244	Minimum Performance Requirements for Position Determination Service for cdma2000 Spread Spectrum Systems C.S0022-B	Minimum Performance Requirements for Position Determination Service for cdma2000 Spread Spectrum Systems C.S0022-B	C.S0036-A v1.0
00246	PCC Support for MS-initiated QoS in cdma2000 1x and HRPD Networks	Introduce 3GPP based Policy and Charging Control (PCC) support for MS-initiated QoS in cdma2000 1x and HRPD networks.	X.S0062-0 v1.0
00247	Over the Air Interoperability Test Requirements for HRPD Rev B	OTA test requirements for C.S0024-B	C.S0058-B v1.0
00248	Interoperability Test Requirements for HRPD Rev B	Interoperability test requirements for C.S0024-B	C.S0044-B v1.0
00249	Bug Fixes for the R-UIM Conformance Test Specification	Bug fixes for R-UIM Conformance Test Spec C.S0049-0 v2.0	C.S0049-0 v3.0
00250	Position Services Specification Bug Fixes	This work corrects errors in the C.S0022-B v1.0 specification and ASN.1 file C.R0022-B v1.0 (Software Distribution).	C.R0022-B v2.0, C.S0022-B v2.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00251	Definition of Multimode System Selection (MMSS) Elementary Files	The Elementary Files (EFs) for Multimode System Selection (MMSS) will be developed for use with smart cards. The EFs will be placed under a new Dedicated File (DF) defined under DF TELECOM	C.S0065-B v1.0, C.S0074-A v1.0
00252	cdma2000 1x Rev E Bug Fixes	Correct 1x Rev E Bugs.	C.S0001-E v2.0 thru C.S0005-E v2.0
00253	CSIM Conformance Test Requirements	CDMA Subscriber Identity Module (CSIM) Conformance Test Requirements for Mobile Equipment and Card.	C.S0101-0 v1.0
00255	Minimum Performance Requirements for Micro and Pico cdma2000 Base Stations	Develop test procedures and minimum performance requirements for Micro and Pico cdma2000 Base Station (BS). Micro cdma2000 1x BS and High Rate Packet Data (HRPD) BS can be deployed in medium range (micro) environments. Pico cdma2000 1x BS and HRPD-BS can be deployed in local area environments.	C.S0010-D v1.0, C.S0032-C v1.0
00261	Air Interface Application Layer Security for HRPD	The work item introduces additional security functionality at the application layer for HRPD that would allow for more efficient and flexible data encryption and message integrity protection.	C.S0102-0 v1.0
00267	cdma2000 1x Revision E Feature guidelines	Guidelines and recommendations will be developed to assist with the use of cdma2000 1x Rev E features in earlier cdma2000 1x revisions.	C.S0099-0 v1.0
00268	Revise MS/AT Minimum Performance Requirement due to AMPS Sunset	Revise the requirement in MS/AT Minimum Performance Specification due to AMPS Sunset.	C.S0011-D v1.0, C.S0033-C v1.0
00271	Zero-Byte Header Compression for xHRPD	Definition of complete header stripping and generation mechanisms for xHRPD.	C.S0103-0 v1.0
00272	Zero-Byte Header Compression for xHRPD	Definition of complete header stripping and generation mechanisms for xHRPD.	C.S0014-D v3.0
00273	CSIM Bug Fixes for Revision B	Bug fixes and clarifications for CSIM specification.	C.S0065-B v2.0

Work Item Number	**Feature Name**	**Description**	**Specs & Reports** (The latest version supersedes previous versions)
00278	Bug Fixes for the E-UTRAN – cdma2000 1x Connectivity and Interworking Air Interface Specification	Bugs in the E-UTRAN – cdma2000 1x Connectivity and Interworking Air Interface Specification will be addressed.	C.S0097-0 v2.0
00280	IOTA DM Management Object ID (MOID) bug fix to IP Based Over-the-Air Device Management (IOTA-DM) for cdma2000 Systems	Correct IP Based Over-the-Air Device Management (IOTA-DM) for cdma2000 Systems specification for MOID reference. Other bug fixes may be included.	C.S0064-0 v2.0
TSGA-009-A	Multi RLP Support and Cross Paging	This work addressed HRPD-1x cdma2000 Circuit Services Notification Application (CSNA), support for multiple personalities in the session configuration protocol and support for Multi-Flow Packet Application (MFPA).	A.S0008-A v3.0, A.S0008-B v2.0, A.S0008-C v2.0, A.S0009-A v3.0, A.S0009-B v2.0, A.S0009-C v2.0

1

2

4. ABBREVIATIONS

The abbreviations below are used throughout the system release guide.

1xRTT	cdma2000 1x Radio Transmission Technology
3GPP2	Third Generation Partnership Project 2
AD	Abbreviated Dialing
AltPPP	PPP-Alternative Protocol
ATG	Air to Ground
CAN	Connectivity Access Network
CAVE	Cellular Authentication and Voice Encryption
CS	Circuit Switched
E-UTRAN	Enhanced Universal Terrestrial Radio Access Network
HRPD	High Rate Packet Data
IOS	Interoperability Specification
IOTA-DM	IP Based Over-the-Air Device Management
IMS	IP Multimedia Subsystem
IP	Internet Protocol
LBS	Location Based Services
LTE	Long Term Evolution (3GPP technology)
MEID	Mobile Station Equipment Identifier
MMD	Multimedia Domain
MPS	Minimum Performance Specification
OAM&P	Operation, Administration, Management, and Provisioning
PDIF	Packet Data Interworking Function
PHY	Physical Layer of the Access Network
PMIP	Proxy Mobile IP
PSVT/MCS	Packet Switched Video Telephony
PUZL	Preferred User Zone List
QoS	Quality of Service
SeGW	Security Gateway Function
SMS	Short Message Service
SRG	System Release Guide
TDD	Time Division Duplex

TSG	Technical Specification Group
UICC	Universal Integrated Circuit Card
UMB	Ultra Mobile Broadband
VoIP	Voice Over IP
VSA	Vender-Specific Attribute
WLAN	Wireless Local Area Network

1