



3GPP2 – The Partnership Project for The Global cdma2000® Specifications

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Presentation Overview

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3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"

What is 3GPP2?

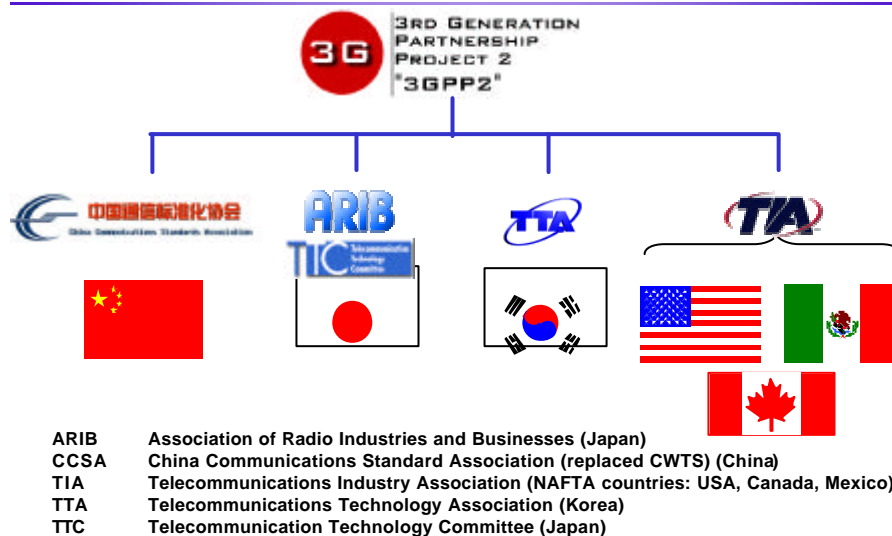
The Third Generation Partnership Project 2 (3GPP2) is:

- A collaborative third generation (3G) telecommunications specifications-setting project.
- Comprised of North American and Asian interests developing global specifications for ANSI/TIA/EIA-41 "Cellular Radiotelecommunication Intersystem Operations network evolution to 3G".
- Focused on global specifications for the radio transmission technologies (RTTs) supported by ANSI/TIA/EIA-41 and the wireless IP network, particularly known as the cdma2000® family.



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3GPP2 Organizational Partners



Other 3GPP2 Partners

Market Representation Partners

- CDMA Development Group



Observers

- ETSI
- TSACC



Individual Members: Over 70 companies

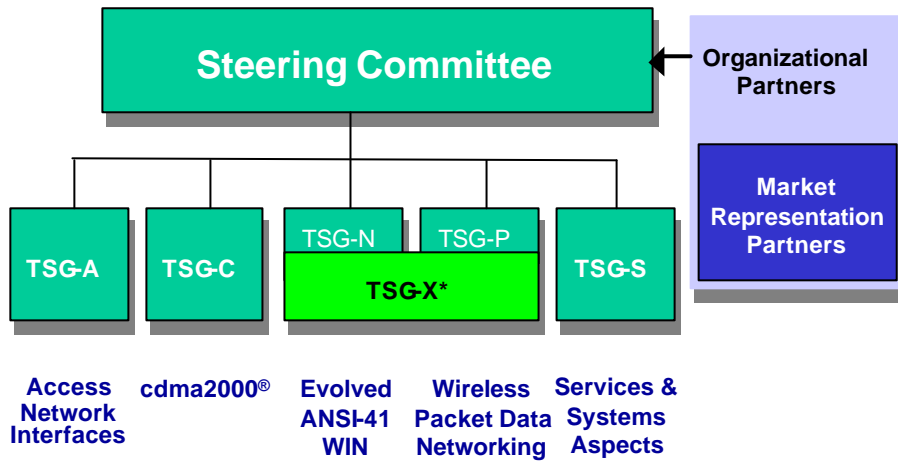
3GPP2 SC Leadership

Steering Committee

- Chair:** Dr. Hideo Okinaka (KDDI)
- Vice Chair:** Gerry Flynn (Verizon Wireless)
- Vice Chair:** Dr. Y.K. Kim (LG Telecom)
- Vice Chair:** Wan Yi (CCSA)
- Secretariat:** Henry Cuschieri



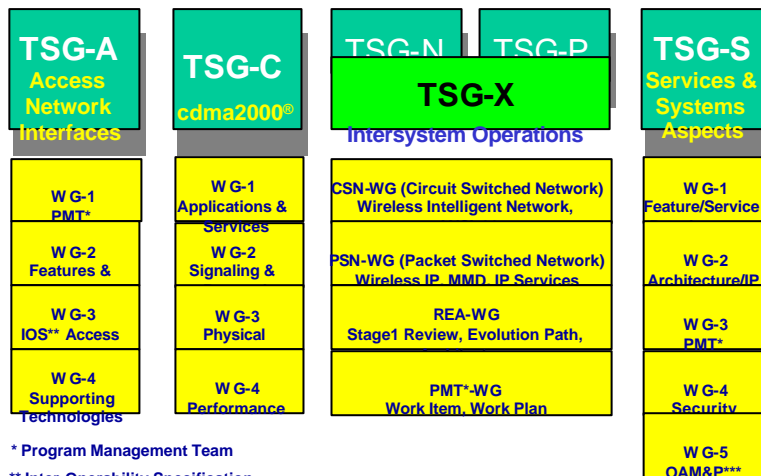
3GPP2 Structure



* TSG-N and TSG-P were merged to form TSG-X in February 2003.



3GPP2 Structure (continued)



* Program Management Team

** Inter-Operability Specification

*** Operations, Administration, Maintenance & Provisioning



TSG Activities/Status – TSG-A

Responsible for the Access Network Interface (i.e., connection between the Core Network and the Air Interface). The following specifications have been published:

- Access Network Interfaces Inter-Operability Specifications for cdma2000® Revision 0, Revision A, Revision B, and Revision C (1xEV-DV)
- Inter-Operability Specification (IOS) for High Rate Packet Data (HRPD) Access Network Interfaces
- CDMA Tandem Free Operation (TFO)
- BTS-BSC Interoperability (Abis Interface)



TSG Activities/Status – TSG-C

Responsible for the Air Interface including associated terminal capabilities, performance requirements, and ancillary specifications. The following air interface specifications have been published:

- cdma2000® Revision 0, Revision A, Revision B, and Revision C (1xEV-DV)
- High Rate Packet Data (HRPD)
- Direct Spread Specification for Spread Spectrum Systems on ANSI-41 (DS-41)
- Multi-Carrier Specification for Spread Spectrum Systems on GSM MAP (MC-MAP)
- Voice and Data Services Options



TSG Activities/Status – TSG-S

Responsible for Services and Systems Aspects including the following:

- Stage 1 Requirements documents
- 3GPP2 NAM (Network Architecture Model) and 3GPP2 Evolution document.
- 3GPP2 Program Management activities including process guidelines
- 3GPP2 Network Security specifications
- 3GPP2 OAM&P (Operation, Administration, Maintenance and Provisioning) specifications



TSG Activities/Status – TSG-X

Responsible for all Core Network specifications including the legacy circuit switched network platform, the new All IP network platform, and the evolution path between the two. The primary specifications which have been published include:

- Cellular Radiotelecommunications Intersystem Operations (ANSI/TIA/EIA-41) and enhancements
- Wireless IP Network Standard and enhancements
- Legacy MS Domain
- Multimedia Messaging Service
- Open Service Access – Application Programming Interface



3GPP2 Release Alpha

- **Release Alpha is a coordinated 3GPP2 system release which is composed of the latest feature sets across the system.**
- **Release Alpha is:**
 - **Defined in detail in cdma2000® System Release Guide (under development as S.R0052).**
 - **Completed in October 2003.**



Primary Release Alpha Features and Service Capabilities

- **Legacy MS Domain (LMSD) Step1**
- **HRPD Phase-II capabilities**
- **Packet data flow control and handoff capability to support high speed packet data**
- **Base Station (BS), Packet Control Function (PCF), Packet Data Serving Node (PDSN) interface version control for the IOS standard**
- **Enhanced cdma2000 Supplemental Channel operation**
- **Inter-standard roaming capability between cdma2000 and Global System for Mobile Communications (GSM) systems**
- **Selectable mode vocoder and supporting functions**
- **Quality of Service (QoS) control to support multiple service instances and IP transport**
- **Header compression for voice over IP service standard**
- **Voice over IP (VoIP)**
- **IP Broadcast and IP Multicast**
- **Other enhanced features in Revision-C of the cdma2000 air interface**



1xEV-DO (HRPD) Overview

- **1xEV-DO = 1x Evolution – Data Only**
- **HRPD = High Rate Packet Data**
- **HRPD Rev. 0 Stage 1 requirements (S.R0023) are:**

	Forward Link	Reverse Link
Vehicular Peak Data Rate	1.25 Mbps	144 kbps
Vehicular Average Data Rate	600 kbps	144 kbps
Fixed/Pedestrian Data Rate	2 Mbps	144 kbps

- **HRPD specification was originally published in Oct. 2000 and most recently updated in Oct. 2002 (C.S0024-0).**
- **HRPD Rev.A is under development. The primary focus of this release is to improve Reverse Link Performance and to incorporate technologies developed for 1xEV-DV.**



1xEV-DV Overview

- **1xEV-DV = 1x Evolution – Data and Voice (on the same channel)**
- **A projection of 1xEV-DV performance is noted below:**

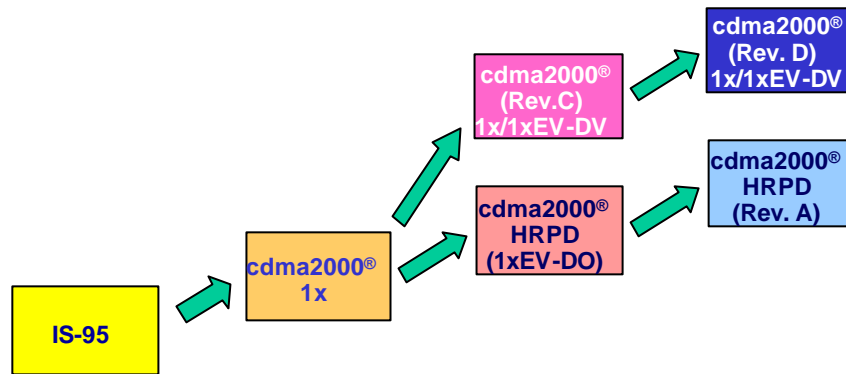
	Forward Link	Reverse Link
System Wide Average Data Throughput – Full Buffer *Pedestrian Speed	1.7 Mbps*	285 kbps
System Wide Average Data Throughput – Mixed Traffic/Mixed channel	420 kbps	90 kbps
Packet Data Peak Data Rate	3 Mbps	450 kbps

All data rates calculated for a data-only configuration with a mix of data services based on procedures in the 3GPP2 1xEV-DV Evaluation Methodology.

- **1xEV-DV specifications were published as cdma2000[®] Rev.C in May 2002:**
 - C.S0001-C Introduction
 - C.S0002-C Physical Layer
 - C.S0003-C MAC
 - C.S0004-C LAC
 - C.S0005-C Layer 3 Signaling
 - C.S0006-C Analog
- **cdma2000[®] Rev.D is under development. Its primary focus is to improve Reverse Link Performance.**



cdma2000® Evolution



Harmonisation Momentum

3GPP2 & 3GPP Harmonisation

- ◆ cdma2000®-UMTS interoperability – “Hooks & Extensions” (1999)
- ◆ All IP network – Harmonisation Meeting (2002)
- ◆ 1xEV-DV-HSDPA – Harmonisation Meeting (2001)
- ◆ Spatial Channel Modelling Group (2002)
- ◆ OSA/API JWG (3GPP/ETSI/Parlay/3GPP2)
- ◆ UIM
- ◆ MEID

ITU Support

- ◆ Inputs to ITU-R Rec. M.1457 (ITU-R WP8F)
- ◆ Inputs to ITU-T Rec. Q.1742 (ITU-T SSG)

IETF Coordination

OMA Coordination



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Thank You!

For more information, please visit

<http://www.3gpp2.org>