CDG
Device Industry Initiatives

CDMA Development Group
May, 2008

Topics

- Device Strategy Council
- Global Handset Requirements for CDMA (GHRC) Team
  - Ongoing work
  - New Open Market Handset (OMH) SIG
- Certification and Test – moved to CDMA Certification Forum (CCF)
- Aggregation of device procurement

CDMA2000: The Largest Selection of 3G Devices

Over 1980 CDMA2000 devices have been introduced to the market

Entry-level Voice-centric Handsets

Personal Messaging Mobile Phones

Fixed Wireless Phones

PDAs

EV-DO Fixed Wireless Terminals

Interactive Multimedia CE Devices

EV-DO PC Cards

EV-DO USB modems

WorldMode™ Global Roaming Phones

Television Phones

EV-DO PCexpress Embedded Modules for PC Notebooks

91 million people use 1xEV-DO broadband data services offered by 82 service providers worldwide

* CDMA450

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Device Strategy Council (DSC)

DSC Coordinates CDMA Device Efforts

DSC provides leadership and strategic direction for the commercialization of CDMA devices

Device Strategy Council Objectives

DSC is chaired by Verizon and Telus and priorities are CDMA carrier driven

- Provide Strategic Direction
- Support deployment of New Applications and Technologies
- Recognize Existing Industry Standards
- Coordinate CDG Device Activities
- Reduce Test & Acceptance Time
- Align with Industry Best Practices
- Accelerate Time-to-Market
- Evolve Test Paradigm
- Replicate Proven Formulas

Verizon hosted last DSC meeting on May 5 in Bridgewater, NJ

Device Strategy Council Priorities

- Overall GHRC prioritization of technical requirements
- Test Process Convergence within CCF
- Kicking off CDG's Open Market Handset (OMH) initiative

Certification and Test

- System Test Team (STT) effort transferred to an ad-hoc working group in CCF
- All former STT-generated reference documents transferred to CCF for maintenance
- Separation of CDG's GHRC requirements generation and CCF's certification is maintained

Global Handset Requirements for CDMA (GHRC)

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GHRC Definition and Objective

Defines a common set of open standard specifications that will meet a shared set of carrier requirements and device functionality

DOCUMENT	TITLE
CDG Doc 90	Voice/SMS/Data
CDG Doc 91	Mobile Browser (WAP 2.0)
CDG Doc 92	MMS (OMA v1.2)
CDG Doc 93	1xEV-DO Rev 0
CDG Doc 95	Mobile Video
CDG Doc 97	Push to Talk (POC)
CDG Doc 98	LBS-V1
CDG Doc 99*	BREW
CDG Doc 100	JAVA MIDP 1.0
CDG Doc 101	LBS-V2

DOCUMENT	DOCUMENT
CDG Doc 108	JAVA MIDP 2.0
CDG Doc 109	WorldMode Phone
CDG Doc 111	LBS IS801-1 Call Flows
CDG Doc 142	RUIM
CDG Doc 143	System Determination
CDG Doc 148	1xEV-DO Rev A
CDG Doc 150	JSR-179
CDG Doc 154*	PRI
CDG Doc 155*	Mobile IP
CDG Doc 160*	Data Retry

*IN PROGRESS

So that a group of carriers can use them to source and deliver CDMA2000 devices faster and more economically than before.

GHRC Value Proposition

- Common Requirements
- Fewer SKUs
- Reduced NRE Costs
- Streamlined Production

- Volume Aggregation
- Economies of Scale
- Faster Delivery
- Global Compatibility

With common well defined and prioritized requirements, device and application suppliers face fewer operator-specific variants for their device designs

GHRC Leadership

Steve Werden, Verizon Wireless, Co-chair

Stephen Ospalak, Telus, Co-Chair

Asif Hamidullah, Telus, Technical Co-Chair

David Tokunaga, Nokia, Co-Chair

Doug Martel, Qualcomm, Co-Chair

Device Programs Admin: Mary Beth Saboe

Sanyogita Shamsunder, Verizon

Juan Ranuarez, Telus

Matthew Tasooji, Nokia

Aaron Konvisser, Nokia

Somin Park, Nokia

James Person, CDG

Bill Dahnke, CDG*

David Hind, CDG*

Sean Casey, Sprint Nextel

Eric Fradette, Alltel

Gaurav Lamba, Qualcomm

Saravana Kannan, Qualcomm

Patricia Feng, Gemalto

Naidu Mullaguru, Qualcomm

Walid Hamdy, Qualcomm

Supporting Open Device Initiatives, such as at Verizon Wireless

Step 1
Customer Identified Need Statement

Step 2
Define Common Handset Requirements (GHRC)

Step 3
Design and Build Prototype Handset

Step 4
Test and Certify Handset in CCF Lab

Step 5
Test and Certify Handset in the Field CCF

Step 6
Carrier Acceptance Friendly User Trials

Step 7
Production of Handsets

Step 8
Distribute to Carrier

Step 9
Launch and Promote Handset Availability

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Open Market Handset (OMH) SIG

- Executive Board and DSC reviewed and authorized OMH kick-off in December
- What it is: a SIG of GHRC for R-UIM card-based open market distribution
- What it does: Solves packet data issue by locating all PD parameters on the R-UIM

Open Market Handset (OMH) SIG

- Aggressive schedule and efforts since January
  - Kick-off in Mumbai and Jakarta
  - Proof of concept trials
- Most recent meeting in Mumbai on April 18
  - Operators, chipset, R-UIM and device vendors actively involved
  - Working devices shown

Changes to an Open Market Handset

HANDSET PROVISIONING

- Handset specific configuration
  - Model
  - ESN/MEID
- Handset Customization
  - OEM applications

- Packet data configuration
  - NAI profiles
  - PAP/CHAP Authentication
  - Simple IP / Mobile IP
- Application configurations
  - MMS, WAP/Browser, BREW, JAVA
- LBS configuration

OMH R-UIM PROVISIONING

- **IMSI-M/T**
- **MIN/MDN**
- **MCC/MNC**
- **A-key**
- **UIM ID / ESN**
- **PRL**
- **SPN (service provider name)**

Full-featured R-UIM supports a richer set of value added services

Aggregation: An Example

W - 385

< 10 Months

- GHRC specs statement
- Generic customization Acceptance
- RFP to 10 OEMs
- Candidates Selection
- Decision taken
- Individual Certification Process by carriers
- Carriers Issue PO´s to vendor
- Delivery

CDMA2000: Wide Range of Affordable Devices

Competition and economies of scales are driving prices down

Sub-US$50

BREW-enabled low-end phones

Sub-US$40

Sub-US$30

59 entry-level CDMA2000 handsets from 13 suppliers

Notes: 1. Mobile devices shown are sold in India at an ex-factory wholesale cost below US$50.
2. Only devices shipped in volumes above 10,000 units are shown.

Legend: Color Screen Handsets

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CDMA2000 WorldMode™ Devices

Global roaming enabled with CDMA2000 1X/GSM multi-mode/multi-band devices`

WORLDMODE
CREATING A WORLD WITHOUT BOUNDARIES

Dual-mode
Dual-working
CDMA2000 1X CDMA GSM GSM


Apple Vista CG239


Apple Vista CG288


Apple Vista AV-V2


HKC W1000


CECT C828


Daxian C8000


LGE W800


LGE W810


Hisense D806


H.K. Tone Land Technology 688 TV Phone


H.K. Tone Land Technology 860


H.K. Tone Land Technology 6680


HK Teniu Intl' Group TY0052


KBS Industrial K680


KBS Industrial W5


KBS Industrial GC668


KBS Industrial Y767


Motorola A840/A860


Qingdao Createk DICI


Qingdao Createk CG100


Samsung SCH-A790/W109/ A795/IP-A790


Samsung SCH-i819


Samsung SCH-W219


Samsung SCH-W379


Samsung SCH-W399


Samsung SCH-W531


Samsung SCH-W569


Samsung SCH-W579


Samsung SCH-V920


Shenzhen KDI D58


T-Link SAM-W399


T-Link SAM-W109


TechFaith Gallic


Ubiquam U-520


UTStarcom T66


Yulong Telecom Coolpad 238


Yulong Telecom Coolpad 269


Yulong Telecom Coolpad 728


Yulong Telecom Coolpad 728B


Yulong Telecom Coolpad 858T

Yulong Telecom Coolpad C288

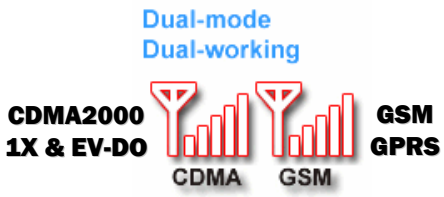
Zaxid C303

Zaxid C208a

ZTE H350

CDMA2000 WorldMode™ Devices

Global roaming enabled with CDMA2000 1X/EV-DO/GSM/GPRS multi-mode/multi-band devices



CDMA2000 1X/EV-DO/GSM/GPRS WorldMode Devices

Amoi V810 **(EV-DO)**

Amoi CMA8301 **(EV-DO)**

BlackBerry 8830 **(EV-DO)**

LGE KW-9200 **(EV-DO)**

Samsung SCH-i830 **(EV-DO)**

Amoi V8107 **(EV-DO)**

Motorola Z6c (EV-DO)

Samsung SCH-i325 **(EV-DO)**

Motorola Z6tv (EV-DO)

Motorola Z6cx (EV-DO)

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Industry Support

GHRC has already achieved critical mass and broad industry support.

If your company is not yet participating, you should.

Next GHRC meeting in September, hosted by Telus.

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