



3G CDMA Enabling Wireless Broadband

Demonstration for the Subcommittee on Telecommunications and the Internet

May 19, 2004

Launchpad Applications
BREWapi
BREW Distribution System
gpsOne
CDMA Chipsets
Homeland Security Initiatives
Fleet Management Solutions
CDMA2000 1X
CDMA2000 1xEV-DO
CDMA2000 1xEV-DV
WCDMA/UMTS
Application Solutions
Mobile Processors
Base Station Processors
Radio Processors
CDMA University
Network Optimization
Software Tools
Development Tools
QCTest Tools
Client Software
Digital Cinema
Advanced Security Solutions

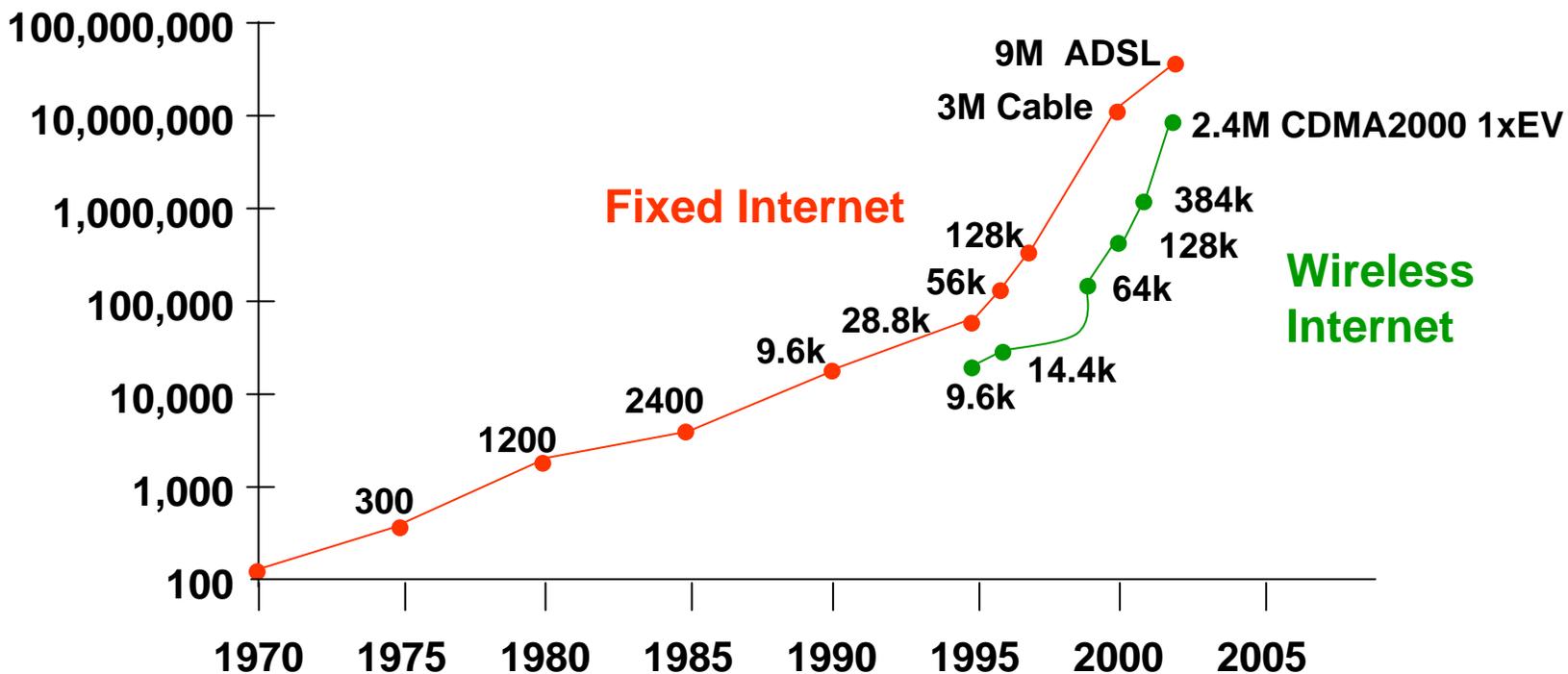
Australia • Austria • Belarus • Brazil • Canada • Chile • China • Colombia • Denmark • Dominican Republic • Ecuador • Guatemala • India • Indonesia • Israel • Italy • Japan • Mexico • Moldova • New Zealand • Nicaragua • Panama • Romania • Russia • South Korea • Sweden • Taiwan • Thailand • United Kingdom • United States • Venezuela • Vietnam

QUALCOMM CDMA Technologies
QUALCOMM Technology Licensing
QUALCOMM Wireless and Internet Group
QUALCOMM Strategic Initiatives

Internet Evolution: Bandwidth



Bandwidth (bps)

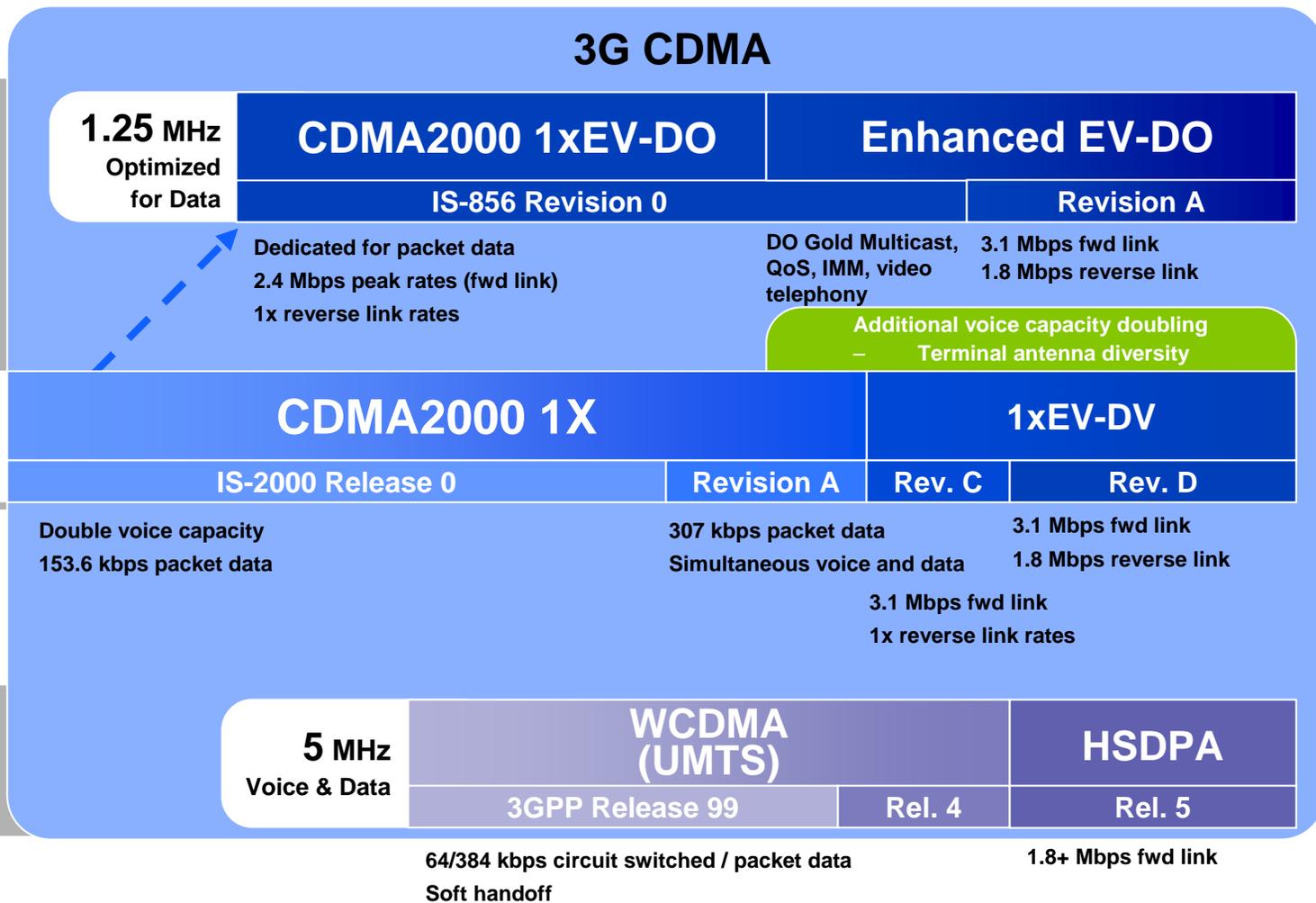


3G CDMA Evolution – Today and Tomorrow

Designed for In-Band Migration

1.25 MHz Voice & Data

Designed for New Spectrum



What is CDMA2000 1xEV-DO

- **1xEV-DO – EVolution, Data Optimized**
 - Full name is CDMA2000 1xEV-DO - part of the 3G CDMA family
- **Delivers data at rates up to 2.4 Mbps**
 - Average data rates in the hundreds of kbps
 - Typically 300 kbps – 600 kbps
- **Fixed, portable or fully mobile use**
 - “Always-on” experience
- **Cost-effective for operators, requires little spectrum**

- **1xEV-DO is a 3G data evolution for CDMA operators**
- **Data and voice handoffs with CDMA**
- **Devices are backward/forward compatible**
- **Incremental upgrade over current CDMA2000 1X network**
- **1xEV-DO works seamlessly with existing, IP-based network infrastructure**



CDMA2000 1xEV-DO

Over 6 Million Subscribers and Growing



Coming Soon



EV-DO Rel 0

QUALCOMM
5500
San Diego, CA
USA

EV-DO Rel 0,
GSM/GPRS

QUALCOMM
6500
San Diego, CA
USA

EV-DO Rel 0,
GSM/GPRS

QUALCOMM
6550
San Diego, CA
USA

EV-DO Rel 0,
EV-DV,
GSM/GPRS

QUALCOMM
6700
San Diego, CA
USA

EV-DO Rev A,
GSM/GPRS

QUALCOMM
6800
San Diego, CA
USA

EV-DO Rev A,
GSM/GPRS

QUALCOMM
7500
San Diego, CA
USA

EV-DO Rev A,
GSM/GPRS,
WCDMA

QUALCOMM
7600
San Diego, CA
USA



Over 60 1xEV-DO Devices...commercially introduced

\$600+ range:

Samsung MITS M400
207 grams



\$501 - \$600:

Samsung SCH-V420
90 grams



Sierra Wireless PC5220
50 grams



Kyocera W01K
55 grams



GTRAN DotSurfer 6000
35 grams



PC Cards
from \$150:

GTRAN DotSurfer 6210
35 grams



\$401 - \$500:

Samsung SPH-E1700
115 grams



Samsung SCH-E170
110 grams



Samsung SCH-V410/SPH-V4300
108 grams



Samsung SCH-E300
90 grams



Samsung SCH-V310
129 grams



Samsung SCH-V350
95 grams



SK Teletech IM-6400
104 grams



\$301 - \$400:

Samsung SCH-E250/SPH-E2500
90 grams



Samsung SPH-E2000
97 grams



Samsung SPH-V3000
128 grams



Samsung SCH-V300
110 grams



Samsung SCH-E370
105 grams



Samsung SCH-E140
91 grams



Motorola MS-150
82 grams



LG LG-KV1300/LG-SV130
110 grams



SK Teletech IM-6500
100 grams



SK Teletech IM-6100
101 grams



\$201 - \$300:

KTF E2500
79 grams



Samsung SCH-E110
95 grams



Samsung SCH-E160
96 grams



Samsung SCH-E130
85 grams



Samsung SCH-E120
81 grams



Samsung SCH-E135
74 grams



Samsung SCH-E150
113 grams



Samsung SPH-E1000
91 grams



Samsung SCH-E100
89 grams



LG LG-KH5000
110 grams



LG LG-KV1100 (CYON)
90 grams



\$101 - \$200:

Motorola V740 (Appeal TT800)
80 grams



SK Teletech IM-6200
80 grams



Hitachi W11H
125 grams *



Kyocera W11K
128 grams *



Hyundai PG-S1200, K1200, L1200 (Curitel)
92 grams



KTF E2000
79 grams



Hyundai PS-E100 (Curitel)
91 grams



SK Teletech IM-5300
95 grams



Motorola MS-100
80 grams



LG LG-SV1100 (CYON)
90 grams



Source: Retail pricing from South Korea, except when marked (*) which denotes Japanese retail price; PC cards from Korea, Japan, and the United States

What's Next for CDMA2000 1xEV-DO?

Multimedia Services, Increase Data Rates and System Capacity, and Lower Costs

Quality of Service (QOS)

Different levels of priority

Instant Multi-media

Audio and video together

Personal Media

Multiple channels of video/audio

Equalizer

Increase sector capacity 20-60%



Receive Diversity

4X capacity in 1.25 MHz

2x Multicarrier

Two 1xEV-DO carriers simultaneously, doubling data rates

Location-based services (LBS)

High resolution locations