Solución de ZTE en CDMA2000

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Gerente de Producto
Redes Móviles
2009-4-23
Contents

- CDMA2000: ZTE Advantages and Benefits
- ZTE Products
- CDMA450 WLL Solution
- GoTa (Push to Talk) Solution
All-IP Architecture
ZTE ALL-IP Ap Solution

Supporting TrFO & RTO
- Reducing cost of Vocoder
- Increasing Qos of Voice
Multiple Technologies with Unified Platform

- WiMAX
- LTE
- CDMA Enhanced

One Access Platform

- Sharing cabinet between GSM, WCDMA, CDMA, WiMAX, LTE
- Sharing RF models
- Sharing BaseBand models

MicroTCA platform

- GSM
- WCDMA
- CDMA
- WiMAX
- TD-SCDMA

MicroTCA Telecom standard Architecture
Cost Effective All-around

Reducing OPEX

- Half or less accessory facilities
- 70% or less maintenance cost
- Green system

Decreasing CAPEX & OPEX

- Saving 80% transmission bandwidth
- Saving 30% to 50% vocoders
- Sharing resources
- Decreasing 30% investment of BTS with power distribution between carriers
- Reducing 45% power consumption with large integration

Low cost BTS Solutions

- Reducing over 60% cost of per person and day

Providing lower TCO solution for operators
Contents

- CDMA2000: ZTE Advantages and Benefits
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CDMA Seamless Coverage

Terminal
- Handset
- FWT
- PCMCIA Card

BSS
- Rural
- Urban
- Suburban
- Dense Urban
- Hotspot
- Indoor

CN
- PLMN
- PSTN
- Internet
- PDSN

Transmission Network

Macro BTS
Micro BTS
BBU+RRU
Femto Cell
Cost Saving Core Network Evolution

Flexible configuration and smooth evolution will help to reduce the CAPEX & OPEX.

- **ZXC10-MSC/VLR**
  - Maximum capacity: 600,000 Subs
  - Flexible configuration

- **ZXC10-HLR/AuC**
  - Maximum capacity: 1,200,000 Subs
  - Flexible configuration

- **ZXC10-MSCe/MGW**
  - All-IP Platform
  - Maximum traffic: 60,000 Erlang
  - Flexible configuration

- **ZXC10-HLRe**
  - Maximum capacity: 6,000,000 subscribers
  - Flexible configuration

- **ZXC10-PDSN (P100)**
  - Maximum supported data subscribers: 120,000
  - Maximum active PPP: 10,000
  - Maximum throughput: 200Mbps
  - Support Cluster

- **ZXPDSS P200**
  - All-IP Platform
  - Maximum active PPP: 480,000
  - Maximum throughput: 4.8G
Multiple BTSs for Diversified Coverage Solutions

**Indoor BTS**
- **ZXC10-CBTS**
  - Support CDMA2000 1x & EV-DO
  - Maximum 12 CS /Rack
  - Footprint 600mm*600mm

- **ZXC10-MBTS**
  - Support 1x or EV-DO
  - Maximum 1CS/Box
  - Weight: 37kg/Box

**Outdoor BTS**
- **ZXC10-CBTS 01**
  - Support 1x & EV-DO
  - Maximum 12CS/Rack
  - Footprint 900mm*780mm

- **ZXC10-MBTS**
  - Support 1x or EV-DO
  - Maximum 1CS/Box
  - Weight: 37kg/Box

**All IP Structure**
- **ZXSDR-BS8800**
  - Support CDMA2000 1x & EV-DO
  - Smooth evolves to LTE
  - Maximum 48 CS /Rack
  - Footprint 600mm*450mm

- **ZXSDR-R8860**
  - Support CDMA2000 1x & EV-DO
  - Smooth evolves to LTE
  - Maximum 8C1S per unit
  - TOC: 60W

**SDR**
- **ZXSDR-BS8900**
  - Support CDMA2000 1x & EV-DO
  - Smooth evolves to LTE
  - Maximum 48 CS /Rack
  - Footprint 600mm*600mm

- **ZXSDR-B8200**
  - Support 1x & EV-DO
  - Smooth evolves to LTE
  - Maximum 36CS/2U Unit

- **ZXSDR-BS8200**
  - Support 1X/EVDO

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ZTE Terminals

- ZTE is the mobile terminal manufacturer with the self-developed technologies to make the most systems of terminals
  - Multi-frequency: 450M, 800M, 1900M, 850M
  - Dual-Mode: GSM&CDMA, CDMA 1X&EV-DO
  - Market-orientation of terminals: form entry type to high-end terminals
ZTE Terminals in 450MHz

- More devices vendor
- More devices types:
  - low end, middle end and high end devices;
  - FWT/P, Handset, Data card; USB Modem…
- Competitive prices compare to the price of CDMA800, GSM and WCDMA

- WP560CD
  - 450MHz
  - Voice, SMS
  - Data

- WP530I
  - 450MHz
  - Voice, SMS
  - Wireless extension

- M5010
  - 450MHz
  - Bar type
  - Internal antenna
  - 1.5" 65k CSTN LCD
  - Voice, SMS
  - IP dial

- N160
  - 450MHz
  - Bar type
  - B/W LCD
  - Voice, SMS
  - IP dial

- MG478
  - 450MHz
  - MSM6500
  - USB Interface
  - CDMA2000 1X
  - EV-DO Rev.0
  - Data/Voice/SMS
  - Up to 2.4Mbps
Contents

• CDMA2000: ZTE Advantages and Benefits
• ZTE Products
• CDMA450 WLL Solution
• GoTa (Push to Talk) Solution
Pros:
- Decreasing the CAPEX & OPEX
- Smooth upgrade to IMS
- Separated bearing, signal and traffic
- Flexible mobility control
- Flexible numbering Plan, service provisioning and management
- Support full mobile service when so required in the future
- Flexible accounting and management system
- Flexible prepaid voice and packet solution
- Support abundant supplementary services and VAS
Application Scenario of FWT

**PC/ Laptop + FWT**

Data services:
- CDMA2000 1x: max 153.6kbps
- EV-DO RevA: max 3.1Mbps

**Charger/ Public pay Phone + FWT**

Wireless Public pay phone

**Wireless fax**

G3 Fax
Terminals CDMA450 WLL Solution

WF520F

WP510B

WP620B

CDMA2000 1x
FWT
Contents

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- GoTa (Push to Talk) Solution
Global Open Trunking Architecture

The first digital trunking technology and solution worldwide based on CDMA developed by ZTE

GoTa can satisfy the current and future technology and service evolution requirements; Compared with traditional system GoTa has a lot of creative and advanced features.
GoTa Service Introduction

- **Trunking Services**
  - Basic Trunking Services
  - Professional Trunking Services

- **Common Services**
  - Data Services
  - Message Services
  - Voice Services
GoTa Basic Trunking Service

Private call

Group call

Broadcasting call

Emergency call
GoTa Professional Trunking Service

- Broadband Data, Media Transmission
- Callback Request
- End to End Encryption
- Dynamic Regrouping
GoTa Application Scenario

Government Dept. (Include public safety)
- Army
- Police Dept.
- Emergency Service Dept.
- Security Dept.

Public Utility and Transportation
- Hospitals
- Electricity Works
- Aviation
- Ports

Public Scenario
- Construction / Factory
- Business/Trade Sector
- Service Industry (Hotel/ Farm)
- Financial Market
Gota Terminals

- Vehicle Mounted Terminal
  - VJ800
  - W810
- New style
  - G652 (Feb 2008)
  - G780 (Jun 2008)
- Commercial Terminals
  - G651/650/420
  - G612/616/420
  - G5100
## System Comparison

<table>
<thead>
<tr>
<th></th>
<th>iDEN</th>
<th>GoTa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple Access Mode</strong></td>
<td>TDMA</td>
<td>CDMA</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td>No open</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Equipment Cost</strong></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Voice Quality</strong></td>
<td>Fair</td>
<td>Good</td>
</tr>
<tr>
<td><strong>Connection Duration</strong></td>
<td>700 ms</td>
<td>500 ms</td>
</tr>
<tr>
<td><strong>Number of groups per carrier/sector</strong></td>
<td>&lt;6</td>
<td>&gt;15</td>
</tr>
<tr>
<td><strong>Channels per carrier /sector</strong></td>
<td>6</td>
<td>&gt;30</td>
</tr>
<tr>
<td><strong>Data Capability</strong></td>
<td>44K</td>
<td>153.6K</td>
</tr>
</tbody>
</table>
Thanks!

Talking to the future
Summary

Low TCO solutions help operators to create Profitability in Emergent markets

ZTE can provide affordable and customization devices in highly competitive markets

ZTE is the right choice for a long term partnership commencing with 3G to the migration to future 4G

More services, GoTa, SMS, LBS, Multimedia services, etc
CDMA450 Market Fact

CDMA450 Delivers a Multitude of 3G Services
Telephony, VoIP, Broadband Internet Access, Push-to-Talk, Position Location, Multimedia Messaging, Television, Telemedicine, Remote Learning, Public Safety, Enterprise Productivity and other Value Added Services

<table>
<thead>
<tr>
<th>CDMA2000 1X (1.25 MHz Channel)</th>
<th>CDMA2000 1xEV-DO Rel. 0 (1.25 MHz Channel)</th>
<th>CDMA2000 1xEV-DO Rev. A (1.25 MHz Channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak</td>
<td>Peak</td>
<td>Peak</td>
</tr>
<tr>
<td>153 kbps (DL)</td>
<td>2.4 Mbps (DL)</td>
<td>3.1 Mbps (DL)</td>
</tr>
<tr>
<td>153 kbps (UL)</td>
<td>153 kbps (UL)</td>
<td>1.8 Mbps (UL)</td>
</tr>
<tr>
<td>Average User Data Rates</td>
<td>Average User Data Rates</td>
<td>Average User Data Rates</td>
</tr>
<tr>
<td>60 - 100 kbps</td>
<td>300 - 700 kbps (DL)</td>
<td>600 - 1400 kbps (DL)</td>
</tr>
<tr>
<td></td>
<td>70 - 90 kbps (UL)</td>
<td>500 - 800 kbps (UL)</td>
</tr>
</tbody>
</table>

110 CDMA450 Devices Available by 25 Suppliers
85 CDMA2000 1X
15 CDMA2000 1xEV-DO Rel. 0
10 CDMA2000 1xEV-DO Rev. A
3 WorldMode from 2 suppliers

Global Presence
- 296 operators have selected CDMA in 106 countries
- 100 new CDMA operators in past 3 years
- 49 GSM operators have deployed CDMA

Mobile Broadband Leadership
- 70% of today's 3G subscribers use CDMA2000
- 100 million* people use EV-DO across 105 networks
- 50% of global 3G broadband subscribers will be using EV-DO in 2010

Economies of Scales
- 450 million* subscribers today, growing beyond 500 million in 2009
- 100 million new subscribers in 2006
- 200 million devices shipped in 2006

Technology of Choice for Emerging Markets
- 155 WLL networks — The de facto global standard
- 99 CDMA450 networks in over 51 countries — Rapid adoption
- 97 networks in Africa by 2008 — Meeting emerging market needs

Large Ecosystem
- 2015 3G devices from 111 suppliers
- 25 infrastructure and test equipment vendors
- 100's of investors, application developers, VAS suppliers, etc.

Strong Value Proposition
- Reduced total cost of ownership (TCO) — Moving to IP-based
- Sub-US$35 handsets — Price competitive with GSM
- Operators are making money at low ARPU levels — Sub-US$8 ARPU

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Compact Indoor BTS Model – ZXC10 CBTS

**Band Supported:**
450M, 800M, 1900M

**Capacity:**
4C3S in one cabinet, 8C3S with two cabinets back to back configuration

**Dimensions:**
600 mm (23.62 inches) × 600 mm (23.62 inches) × 850 mm (33.46 inches) (W×D×H).

**Gross Equipment Weight:**
1C 3S, 278.88 pounds (126.5 kg)
4C 3S, 342.81 pounds (155.5 Kg)

**Backhaul:**
E1, T1, FE; Maximum 16 E1/T1 supported.

**Input power:**
-48VDC, +24VDC, 110VAC, 220VAC

**Power Consumption:**
1C3S 860W, 2C3S 990W, 3C3S 1370W, 4C3S 1420W
4C6S 2540W, 8C3S 2540W

**Environmental:**
Indoor installed
-5°C - 45°C
15% - 93% humidity

**Mean Time between Failures:**
> 100,000 hours

**Support installation against the wall:**
Front cabling, the space between the rack and the wall shall be less than 20 cm.
Compact Outdoor BTS Model – ZXC10 CBTS O1

Band Supported: 450M, 800M, 1900M
Capacity: 4C3S in one cabinet, 8C3S with two cabinets back to back configuration
Dimensions: 1800 mm (70.87 inches) × 900 mm (35.43 inches) × 780 mm (30.71 inches) (Height × Width × Depth)
Gross Equipment Weight: 1C 3S, 683.42 pounds (310 kg), 4C 3S, 749.56 pounds (340 kg)
Backhaul: E1, T1, FE; Maximum 16 E1/T1 supported.
Input power: -48VDC, 110VAC, 220VAC
Power Consumption: 1C3S 1070W, 2C3S 1200W, 3C3S 1580W, 4C3S 1630W, 4C6S 2960W, 8C3S 2960W
Environmental: Outdoor installed -45°C to +70°C 5% - 98% humidity
Accessories: > 100,000 hours
Resistance from Mechanical Vibrations Comply with ETSI ETS 300 019-1-2 class2.3
## Band Class 5 Block Frequency Correspondence

<table>
<thead>
<tr>
<th>Block Designator</th>
<th>Band Subclass</th>
<th>Mobile Station</th>
<th>Base Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>452.500–457.475</td>
<td>462.500–467.475</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>452.000–456.475</td>
<td>462.000–466.475</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>450.000–454.800</td>
<td>460.000–464.800</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>411.675–415.850</td>
<td>421.675–425.850</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>415.500–419.975</td>
<td>425.500–429.975</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>479.000–483.480</td>
<td>489.000–493.480</td>
</tr>
<tr>
<td>G</td>
<td>6</td>
<td>455.230–459.990</td>
<td>465.230–469.990</td>
</tr>
<tr>
<td>I</td>
<td>8</td>
<td>451.325–455.725</td>
<td>461.325–465.725</td>
</tr>
<tr>
<td>J</td>
<td>9</td>
<td>455.250–459.975</td>
<td>465.250–469.975</td>
</tr>
<tr>
<td>K</td>
<td>10</td>
<td>479.000–483.475</td>
<td>489.000–493.475</td>
</tr>
<tr>
<td>L</td>
<td>11</td>
<td>410.000–414.975</td>
<td>420.000–424.975</td>
</tr>
</tbody>
</table>
Devoting to CDMA standards and development

- ZTE was the first Chinese IT and telecoms manufacturer listed in Business Week’s Information Technology 100.
- ZTE invest in standards and patents to keep at the top of future technology.
- ZTE has submitted over 1800 contributions to international standards organisations.

**Standard**

ZTE is a member of over 50 international standardisation organisations, including 3GPP2, 3GPP, ITU, IEEE, ETSI and CDG.

**Patent**

- ZTE is GoTa patent owner and have over 200 patents of GoTa, including over 30 key technology (system part).

**Partners**

- Grant GoTa IPR to other vendors: Nortel
- Strategy Partners: Qualcomm, Nortel, Cisco, Intel, TI ……