

MODERN COMMUNICATION TECHNOLOGIES AND THEIR IMPACT ON THE COMMUNICATION DIYALA

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ITPC End-to-End Network Structure





MOBILE BROADBAND ERA IS COMING

Mobile broadband subscribers grow rapidly

Mobile data revenue with stable growth

Key Challenge Faced by Mobile Operator

Imbalance growth of data and revenue

Global data revenue and traffic growth, 2008-2013

Voice growth is going down

SMART PHONES ENERGIZE CDMA MBB

ALL Main Stream Smart devices support CDMA

iPhone 4S

Samsung Galaxy Motorola Xoom Sll

More than **1145** EV-DO broadband data devices have been commercialized by more than 100 suppliers by Jan. 2012

Multi-Mode chipset is the future trend

EV-DO subscribers forecast

EV-DO Sub. +250M in next 3 years

74% CDMA OPERATORS OFFER MBB BY EV-DO

EV-DO Rev. B: 9 commercial networks; 8 to be launched

359+ CDMA Operators in 150+ countries leading operators in the world: Sprint LG U+

EVDO: a widely used in emerging

markets

China

Nigeria

Russia

261 EVDO Operators in 112 countries

CDMA2000 1xEVDO Technology Evolution

- Rev B is a smooth evolution of Rev A, significantly increasing data rate of forward and reverse , and also improve user experience
- Maximize protection of investment by different phase development

DO REV.B: HIGHER CAPACITY & BETTER EXPERIENCE

DTX&DRX, save terminal power by 30%

2 Phases of DO Rev.B Evolution

• Phase I

- Multi carrier bundling.
- To improvement on single-carrier peak data rate
- 9.3Mbps FL peak rate & 5.4Mbps RL peak rate with 3 carriers bundling
- Phase II
 - Supporting 64QAM , 4.9Mbps FL peak rate per carrier, 14.7Mbps RL peak rate with 3 carriers .
 - Supporting DTX & DRX, 30% increase on the call time of terminal.
 - Improve utilization rate of CE.
 - Interference Cancellation , improve the reverse capacity.

CDMA Networks In Iraq

• ITPC CDMA Networks

- Governmental Networks related to MOC/ITPC
- Frequency license from CMC maximum no. of channels 2.
- Voice is the main service to the End User
- Private Operator CDMA Networks
 - Private Networks related to investors
 - Frequency license from CMC maximum no. of channels 2 .
 - Voice & EV-DO Rev.A are the main services to the End Users

ITPC CDMA Networks Overview

Pending

Finish

On-going

ITPC CDMA NETWORK PAINS

Resources

Lack of frequency

weak ROI Profit base on voice, no EVDO data

Marketing Demand

Improve & Develop the Marketing subscribers will Grow rapidly

Deployment Suggestion for EVDO

• Upgrade DORA to DOrB in Dense Urban Reuse DORA boards in Urban
area

- **Step1:** Upgrade DORA to DOrB in Dense Urban
- **Step2:** Expand DOrB & DORA coverage
- □ Step3: Launch LTE & reuse DOrB boards to expand coverage (LTE needs 2-5 years)

National Access Network FTTH Enables Smart City

Countries Invest National Access Network FTTH

Total 421,000 Lines FTTx Network Under Construction

FTTH Project In Diyala

• Ministry of Communication, State of Iraq has awarded Alcatel-Lucent a tender for "Supply, Installation of FTTH networks in Diyala"

SCOPE OF WORK:

• This system shall be capable to support triple play services (voice, data and video) in six areas of Baqubah & Muqdadiah. The PON network to be deployed shall be latest GPON (Gigabit PON) technology.

GIGABIT PON (GPON) AN INTRODUCTION

• A new solution has emerged into the optical access market place –GPON (Gigabit PON), offering unprecedented high bit rate support while enabling transport of multiple services, specifically data and TDM, in native formats and at an extremely high efficiency.

The main requirements as mentioned in ITU documents can be summarized as follows:

- Full Service Support including voice (TDM, both SONET and SDH), Ethernet (10/100 BaseT), ATM, leased lines and more.
- Physical reach of at least 20 km with a logical reach support within the protocol of 60 km.
- Strong Operation Administration and Maintenance (OAM&P) capabilities offering end to end service management.
- Security at the protocol level for downstream traffic due to the multicast nature of PON.

Based on the broadband drivers, PON technologies are becoming more and more appealing to service providers. They can support :

- Convergence trend
- Advanced applications
- Virtually unlimited bandwidth demand
- Required business models
- Infrastructure competition.

FTTH - SYSTEM ARCHITECTURE

- Alcatel's Fiber to the User (FTTU) solutions allow operators to extend the core optical network all the way to the user, eliminating the bandwidth bottleneck in the last mile.
- The solution support both residential and small business customers, offering unprecedented voice, video and data over a single fiber.
- The Alcatel 7360 Intelligent Services Access Manager Fiber to the User (ISAM FTTU) is a fully standardscompliant Gigabit passive optical network (GPON) solution with twice as much throughput as other Passive optical network (PON) solutions.

SYSTEM ARCHITECTURE

70000 Lines FTTH Network In Diyala

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E-Education

Splitter Level 1 & Level 2

Splitter Level-1 1 * 4 PLC

Splitter Level-2 1 * 64 PLC

ONT TYPES

Several residential ONT variants for indoor and outdoor applications are available for 7360 FX. The following Alcatel-Lucent ONT models are supported: o I-240W-P

Questions?

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