EVDO – REV. A

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Abstract
In this investigation we’ll looking on the feature and technology advantages of new product EVDO-REV A. This technology offers betters data rate, backward compatibilities and improvement on latency which give you better performance on gaming, downloading and VoIP.

Today having an internet connection is essential, and with this technology you don’t have to be plug to a wire or be stationary on a place because it’s wireless. There is many technologies like this one but with some differences. We’ll compare this technology with others technology and priors version of it in order to determinate which one is better for you.

Introduction
EVDO is a telecommunications standard for the wireless transmission of data through radio signals, typically for broadband Internet access. It uses multiplexing techniques including Code division multiple access (CDMA) as well as Time division multiple access (TDMA) to maximize both individual user's throughput and the overall system throughput. It is standardized by 3rd Generation Partnership Project 2 (3GPP2) as part of the CDMA2000 family of standards and has been adopted by many mobile phone service providers around the world – particularly those previously employing CDMA networks.

EVDO was designed as an evolution of the CDMA2000 (IS-2000) standard that would support high data rates and could be deployed alongside a wireless carrier's voice services. An EVDO channel has a bandwidth of 1.25 MHz, the same bandwidth size that IS-95A (IS-95) and IS-2000 (1xRTT) use. The channel structure, on the other hand, is very different. Additionally, the back-end network is entirely packet-based, and thus is not constrained by the restrictions typically present on a circuit switched network.

The EV-DO feature of CDMA2000 networks provides access to mobile devices with forward link air interface speeds of up to 2.4 Mbit/s with Rev. 0 and up to 3.1 Mbit/s with Rev. A. The reverse link rate for Rev. 0 can operate up to 153 kbps, while Rev. A can operate at up to 1.8 Mbit/s. It was designed to be operated end-to-end as an IP based network, and so it can support any application which can operate on such a network and bit rate constraints.
Rev A

Revision A of EVDO makes several additions to the protocol while keeping it completely backwards compatible with Revision 0. Rev A is an evolution of CDMA2000 1xEV-DO Rev 0 that increases peak rates on reverse and forward links to support a wide-variety of symmetric, delay-sensitive, real-time, and concurrent voice and broadband data applications. It also incorporates OFDM technology to enable multicasting (one-to-many) multimedia content delivery.

These changes included the introduction of several new forward link data rates that increase the maximum burst rate from 2.45 Mbit/s to 3.1 Mbit/s. Also included were protocols that would decrease connection establishment time (called enhanced access channel MAC), the ability for more than one mobile to share the same timeslot (multi-user packets) and the introduction of QoS flags. All of these were put in place to allow for low latency, low bit rate communications such as VoIP.

The additional forward rates for EVDO Rev A are In addition to the changes on the forward link, the reverse link was enhanced to support higher complexity modulation (and thus higher bit rates). An optional secondary pilot was added, which is activated by the mobile when it tries to achieve enhanced data rates. To combat reverse link congestion and noise rise, the protocol calls for each mobile to be given an interference allowance which is replenished by the network when the reverse link conditions allow it. The reverse link has a maximum rate of 1.8 Mbit/s, but under normal conditions users experience a rate of approximately 500-700kbps.

Rev. A’s more symmetric uplink speeds enable users to send large files, email with attachments, high resolution photographs and personal videos from their mobile devices. With its low network latency, service tiering with Quality of Service (QoS) and IP-based broadband architecture, Rev A is able to support time-sensitive applications, such as Voice over IP (VoIP), Push-to-Talk (PTT) and video telephony. Rev A was launched in October 2006, and it is the only All-IP, advanced broadband technology commercially deployed today.

Rev A Enhancements

1xEV-DO Rev A provides several significant enhancements over Rev 0. Chief among these are:

- Higher reverse link peak rate and sector throughput

Rev. A provides higher data rate capabilities on the reverse link (RL). RL peak data rate of 1.8 Mbps can be achieved. This rate is twelve times the 153.6 kbps peak rate in Rev. 0 systems.

Simulation results indicate that, for large number of users in the sector (~10), for the same latency as Rev. 0, Rev. A can achieve a capacity gain of about 3 dB. This translates to a sector throughput of 700 Kbps as opposed to
about 375 Kbps for Rev. 0. When a sector contains few users (~4), Rev A can achieve a capacity gain of about 3.5 dB with marginally higher latency than Rev 0. This translates to about a sector throughput of 672 Kbps as opposed to 300 Kbps for Rev 0.

✓ Higher forward link peak rate and sector throughput

Rev. A offers higher peak forward link physical-layer throughput of 3.072 Mbps as compared to existing Rev. 0 system, which provided a maximum peak rate of 2.4 Mbps. The requirements for link-budget on the forward link is similar to that of a Rev. 0 system.

✓ Improved QoS Support

Rev. A provides efficient channel structure and packet format that facilitates the quality-of-service (QoS) support performed at upper layers. This is accomplished by a combination of PHY (Hybrid ARQ), MAC (Multi-Flow RLMAC) and RLP (Multi-Flow Packet Application) protocol enhancements. See QoS (Quality of Service) Enhancements on page 5-2 for more detail.

✓ Latency Reduction

With enhanced MAC algorithms, bounded latency for delay-sensitive and constant bit-rate traffic, such as gaming, can be provided while simultaneously achieving low latencies for other data traffic, such as FTP and telnet. Simulation results indicate that for large number of users in the sector (~10), Rev. A can achieve the same capacity as Rev. 0 with 50% reduced latency. This translates to about 20 ms latency as opposed to 40 ms for Rev. 0.

Rev. A also offers enhanced access channel rates of 19.2 and 38.4 Kbps to facilitate faster network access. Short packets can be transmitted over the Forward Traffic Channel (FTC), reducing latency for applications like PTT and VoIP. Rev. A also provides for lower latencies during sector switching. This is achieved by using the Data Source Control (DSC) channel.

✓ Increased Capacity through Higher Number of Traffic Channel Resources.

As part of Rev. A, the total number of MAC indices available for forward link (FL) traffic channels have been increased from 59 in Rev 0 to 114 in Rev. A. This provides a higher number of simultaneously active ATs and increased FL capacity. Furthermore, the CSM6800 driver can assign up to 192 channel elements (CEs) for traffic and 24 separate CEs for access (up to 8 / sector). The channel elements are reverse link resources. Typically, one CE is allocated per each active connection.
- Backward Compatibility and Interoperability of ATs

Rev. A is completely interoperable with Rev. 0 ATs. A Rev. 0 AT can establish a call in a Rev. A network. Similarly, a Rev. A AT can also establish a call using its Rev. 0 or Rev. A personality in a Rev. A network.

- All-IP

Internet Protocol (IP) is the foundation for CDMA2000 radio access networks. Like 1xEV-DO Rev 0, All-IP Rev A networks provide operators service flexibility and higher bandwidth efficiencies, which translate into greater control and significant cost savings.

- Advanced services

Enables the enhanced performance of real-time broadband, symmetric data link, and delay sensitive services such as VoIP, push-to-talk (PTT), push-to-media (PTM), video conferencing, multicasting, and rich 3D gaming with multiple players.

- QoS (Quality of Service) Enhancements

With the introduction of the 1xEV-DO Rev A standards, the AT, RAN and the PDSN are capable of providing QoS. The following items describe how the QoS feature enables the RAN to provide application-specific QoS:

- The QoS feature allows the multiple RLP flows to have different characteristics, depending on the applications that are mapped to these RLP flows. This capability makes it possible to utilize RAN resources more efficiently while supporting many different user applications.

- The QoS feature allows the AT to be paged at shorter paging cycle durations, compared to the Rev. 0 default value of 5.12 seconds. This capability can reduce the call setup time for the time-critical applications.

- The QoS feature enables the incoming and outgoing traffic at the network interfaces of the RAN to be prioritized based on the application traffic type.
The QoS feature utilizes the QCOM CSM 6800 Forward Link Scheduler, which prioritizes delay-sensitive traffic over non-delay sensitive traffic. The scheduler attempts to guarantee the configured target throughput rate for rate-sensitive flows. These aspects of the scheduler enable the RAN to meet an application's delay and bandwidth requirements. The QoS feature configures the AT's reverse link MAC (RTCMAC) flow parameters, so that AT can satisfy the applications' delay and bandwidth requirements in the reverse link. RTCMAC enables the RAN and the AT to support per flow.

The QoS feature enables the RAN to interface with a PDSN that is capable of supporting multiple A10s. This capability enables the RAN, the PDSN and the backhaul network in between them to differentiate applications and treat them according to their performance requirements.

- REV A Application

- Mobile Office
- Broadcast/Multicast services-Mass Media Services
- Video Telephony/Conferencing
- Real-time gaming
- Push-to-Talk/See
- Voice over IP
- Location Services
- Video Monitoring
- Personalized Media Services
- Photo and video clips down/uploading
Comparison with priors and future versions of EVDO

The most habitual thing at present in the companies of communications of CDMA (Multiple Code Division Access) EV-DO is Review to that offers practically the same speeds of discharge as the first generation of EV-DO. Now we'll Compare Rev A with the 1x-RTT, Rev 0, Rev B and Rev C.

- **1xRTT**
  The 1xRTT feature of CDMA2000 networks provides access to mobile devices with forward link air interface speeds of up to 153 Kbit/s and the reverse link rate can operate up to 153 Kbit/s.

- **EVDO Rev 0**

- **Forward Channel**
  The primary characteristic that differentiates an EV-DO channel from a 1xRTT channel is that it is Time

- **Reverse Channel**
  Reverse link (from the mobile back to the Base Transceiver Station) on EVDO Rev. 0 operates very similar to that of 3G1X CDMA. The channel includes a reverse link pilot (helps with decoding the signal) along with the user data channels. Some additional channels that do not exist in 3G1X include the DRC channel (described above) and the ACK channel (used for HARQ). Missing from the reverse link is any sort of Power control, because the forward link is always transmitted at full power for use by all the mobiles.

All of the reverse link channels are combined using code division and transmitted back to the base station using QPSK where they are decoded. The maximum speed available for user
data is 153.2 kbps, but in real-life conditions this is rarely achieved. Typical speeds achieved are between 50 kbps - 90 kbps.

- **EVDO Rev. B**

  Is the next form of the technology to hit the market, and will feature enhanced speeds for both downloading and uploading in addition to longer talk times and less interference than previous revisions. The downlink rate is expected to reach 4.9 Mbps with a peak downlink rate of as much as 14.7 Mbps. Furthermore, the Rev. B EVDO format is expected to allow for more efficient file transfers, download of multimedia content, and web browsing.

<table>
<thead>
<tr>
<th>Radio Access Network</th>
<th>Required Spectrum</th>
<th>Peak Forward Link Throughput</th>
<th>Peak Reverse Link Throughput</th>
</tr>
</thead>
<tbody>
<tr>
<td>EV-DO RevB (Two carriers)</td>
<td>2.50 MHz</td>
<td>6.2 Mbps</td>
<td>3.6 Mbps</td>
</tr>
<tr>
<td>EV-DO RevB (Three carriers)</td>
<td>3.75 MHz</td>
<td>9.3 Mbps</td>
<td>5.4 Mbps</td>
</tr>
</tbody>
</table>

- **EVDO Rev. C**

  The first fourth generation (4G) of EVDO, is planned to take place at some time after Rev. B. Known as Ultra Mobile Broadband or UMB, the most advanced form of EVDO in the works will be able to provide peak downlink rates of as much as 280 Megabits per second and uplink rates that are expected to reach higher than 75 Megabits per second. EVDO Rev. C is expected to hit the retail marketplace as early as the summer of 2009.

**Comparison with others technologies.**

- **High-Speed Uplink Packet Access (HSUPA)**

  Is a 3G mobile telephony protocol in the HSPA family with up-link speeds up to 5.76 Mbit/s. The name HSUPA was created by Nokia. The 3GPP does not support the name 'HSUPA', but instead uses the name Enhanced Uplink (EUL)

  The specifications for HSUPA are included in Universal Mobile Telecommunications System Release 6 standard published by 3GPP. "The technical purpose of the Enhanced Uplink feature is to improve the performance of uplink dedicated transport channels, i.e. to increase capacity and throughput and reduce delay."

  - **Versions**

    The following table gives uplink speeds for the different categories of HSUPA.
**HSUPA Category Max Uplink Speed**

<table>
<thead>
<tr>
<th>Category</th>
<th>Max Uplink Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>0.73 Mbit/s</td>
</tr>
<tr>
<td>Category 2</td>
<td>1.46 Mbit/s</td>
</tr>
<tr>
<td>Category 3</td>
<td>1.46 Mbit/s</td>
</tr>
<tr>
<td>Category 4</td>
<td>2.93 Mbit/s</td>
</tr>
<tr>
<td>Category 5</td>
<td>2.00 Mbit/s</td>
</tr>
<tr>
<td>Category 6</td>
<td>5.76 Mbit/s</td>
</tr>
<tr>
<td>Category 7 (3GPP Rel7)</td>
<td>11.5 Mbit/s</td>
</tr>
</tbody>
</table>

**High-Speed Downlink Packet Access (HSDPA)**

Is a 3G (third generation) mobile telephony communications protocol in the High-Speed Packet Access (HSPA) family, which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data transfer speeds and capacity. Current HSDPA deployments support down-link speeds of 1.8, 3.6, 7.2 and 14.4 Mbit/s. Further speed increases are planned for the near future. The networks are then to be upgraded to Evolved HSPA, which provides speeds of 42 Mbit/s downlink in its first release.

**HSDPA categories**

<table>
<thead>
<tr>
<th>Max. number of Category of HS-DSCH</th>
<th>Modulation</th>
<th>Max. data rate [Mbit/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>QPSK and 16-QAM</td>
<td>1.2</td>
</tr>
<tr>
<td>Category 2</td>
<td>QPSK and 16-QAM</td>
<td>1.2</td>
</tr>
<tr>
<td>Category 3</td>
<td>QPSK and 16-QAM</td>
<td>1.8</td>
</tr>
<tr>
<td>Category 4</td>
<td>QPSK and 16-QAM</td>
<td>1.8</td>
</tr>
<tr>
<td>Category 5</td>
<td>QPSK and 16-QAM</td>
<td>3.6</td>
</tr>
<tr>
<td>Category 6</td>
<td>QPSK and 16-QAM</td>
<td>3.6</td>
</tr>
<tr>
<td>Category 7 (3GPP Rel7)</td>
<td>QPSK and 16-QAM</td>
<td>7.3</td>
</tr>
<tr>
<td>Category 8</td>
<td>QPSK and 16-QAM</td>
<td>7.3</td>
</tr>
<tr>
<td>Category 9</td>
<td>QPSK and 16-QAM</td>
<td>10.2</td>
</tr>
<tr>
<td>Category 10</td>
<td>QPSK and 16-QAM</td>
<td>14.4</td>
</tr>
<tr>
<td>Category 11</td>
<td>QPSK only</td>
<td>0.9</td>
</tr>
<tr>
<td>Category 12</td>
<td>QPSK only</td>
<td>1.8</td>
</tr>
</tbody>
</table>

**WIMAX**

The ways of evolution of the companies of communications of GSM and CDMA are relatively simple to make. But the things are complicated when one adds to himself the
miscellany mobile, WIMAX. This technology is completely unpredictable because it is new; no it comes from the evolution of the already existing one, since it is a case of 3G. Also the first red mobile will be the big one scale based on IP.

A commonly-held misconception is that, WIMAX will deliver 70 Mbit/s over 50 kilometers. In reality, WIMAX can do one or the other, operating over maximum range (50 km) increases bit error rate and thus must use a lower bit rate. Lowering the range allows a device to operate at higher bitrates.

EVDO Rev A and VoIP

REV A adds several advancements for VoIP and other multimedia traffic.

Increased channel capacity on both the forward and reverse links Compared to EV-DO Rev. 0, EV-DO Rev. A increases the peak forward link data rate to 3.1 Mbps and the peak reverse link data rate to 1.8 Mbps. The dramatically enhanced uplink data rate will enable Rev. A networks to support significantly more voice connections than is possible under Rev. 0.

QoS support over the air link with multiple flows The EV-DO forward link uses TDM to send packets to various users, which requires a scheduling function to decide which user should gain access to the air link at any given time. EV-DO Rev. A has added the ability for the forward link scheduler to coordinate the use of the EV-DO air link with the various devices that will be using it. Therefore, data devices, which need high data rates but are insensitive to packet delay and jitter, can be handled in one way, while voice devices that need lower data rates but that are highly sensitive to packet delay and jitter will be handled a different way. On the reverse link EV-DO Rev. A permits the use of higher power for QoS packets in order to reduce the number of transmissions and retries necessary to successfully send these packets.

Support for short and multi-user packets Unlike many data applications, voice applications transmit relatively short packets on a regular basis. In EV-DO Rev. 0, the rigid structure of the physical layer leads to inefficient transmission of these short packets. EV-DO Rev. A has addressed this problem in two ways. Unlike Rev. 0, which allows packets sent over the traffic channel to be a minimum of 128 bytes long, Rev. A supports a wide variety of shorter packets, with physical layer packet lengths as low as 16 bytes. These packets can be transmitted in less time, and allow more users to access the network with low latency. In addition, EV-DO Rev. A includes support for multi-user packets. This capability allows a long physical layer packet (with its associated overhead) to be addressed to separate users, again reducing air link overhead as well as per-user delay.
Support for header compression in current networks the overhead (non-voice information) required to direct traffic from source to destination is typically 40 bytes and results in an inefficient overhead to payload ratio of 2:1. For example, 20 msec of speech from an 8 kbps voice coder is 160 bits, or 20 bytes, while the associated IP, UDP, and RTP headers used for VoIP routing and control are 40 bytes. Such inefficiency affects the capacity of the network to handle voice traffic. EV-DO Rev. A supports compression of these headers, from 40 bytes down to approximately 2 bytes, thus enabling high VoIP capacity.

Enhanced Idle State Protocol support for faster, variable, paging while a delay of several seconds in connecting to a server is not noticeable with most data applications, real-time applications such as voice are quite different. Paging channels in digital cellular networks and EV-DO networks in particular, are logical control channels that allow the devices to receive control messages. Slow paging channels would manifest themselves as slow setup times, slow reaction to dialed digits, etc. during a voice call. Rev. A has addressed this issue by creating a variable, faster paging cycle. Voice over IP is the natural progression for mobile networks as operators begin to expand their deployments of packet data systems.

**EVDO Implementation**

On an EVDO basic network there is some component you must have:

- **RNC (Remote Network Controller)**

  The main functions of the RNC are management of radio channels (on the Uu-, or air-, interface) and the terrestrial channels (towards the MGW and SGSN). Radio Resource Management functionality includes the following:
  
  - Outer Loop Power Control (see also open loop power control and inner loop power control)
  - Load control
  - Admission Control
  - Packet scheduling
  - Handover control
  - Macro diversity combining (see also macro diversity)
  - Security functions
  - Mobility Management

- **PDSN (Packet Data Serving Node)**

  - Establishes, maintains and terminates Point-to-Point protocol (PPP) Session with the MS.
  - Establishes, maintains and terminates the logical link to the Radio network across the radio-packet (R-P) interface.
• Initiates Authentication, Authorization and Accounting (AAA) for the MS to the packet data network (Internet) via the AAA Server.
• Receives service parameters for the MS from the AAA.
• Routes packet data between the RAN and the Internet (like NAS in the Internet).
• Collects usage data that is related to the AAA Server.
• Supports both Simple and Mobile IP.
• For Mobile IP the FA (foreign agent) should be implemented on the PDSN (also a HA (home agent) is needed).
• One BSC can interconnect to a few PDSNs for load balancing.

AAA (Authentication, Authorization & Accounting)

The AAA server, also called the RADIUS server, authenticates only the user Internet access and not a user wireless access (same entity used in the Internet). RADIUS – Remote Access Dial-In User Service, communicates with the PDSN via IP. Authentication associated with PPP and Mobile IP connection.

Authentication

Authentication refers to the process of establishing the digital identity of one entity to another entity. Commonly one entity is a client (a user, a client computer, etc.) and the other entity is a server (computer). Authentication is accomplished via the presentation of an identity and its corresponding credentials. Examples of types of credentials are passwords, one-time tokens, digital certificates, and phone numbers (calling/called).

Authorization

Authorization refers to the granting of specific types of privileges (including "no privilege") to an entity or a user, based on their authentication, what privileges they are requesting, and the current system state. Authorization may be based on restrictions, for example time-of-day restrictions, or physical location restrictions, or restrictions against multiple logins by the same user. Most of the time the granting of a privilege constitutes the ability to use a certain type of service. Examples of types of service include, but are not limited to: IP address filtering, address assignment, route assignment, QoS/differential services, bandwidth control/traffic management, compulsory tunneling to a specific endpoint, and encryption.

Accounting

Accounting refers to the tracking of the consumption of network resources by users. This information may be used for management, planning, billing, or other purposes. Real-time accounting refers to accounting information that is delivered concurrently with the consumption of the resources. Batch accounting refers to accounting information that is saved until it is delivered at a later time. Typical information that is gathered in accounting is the identity of the user, the nature of the service
delivered, when the service began, and when it ended.

- **Data optimized module (DOM)**

The data optimized module (DOM) is a CDMA 1xEV-DO (IS-856) module added to the BTS CEM shelf to provide CDMA 1xEV-DO modem capability. The DOM hardware can be deployed across the CDMA 1X network within any BTS containing an SFRM or MFRM. The DOM transmits and receives baseband data to/from the digital control group (DCG) (specifically, the CORE module). The CORE switches the baseband links to the proper carrier on the SFRM or MFRM. The SFRM or MFRM up-converts, filters, and amplifies the baseband signal from the DOM for transmission of data frames over the air to the mobile access terminal.

There are two variants of the DOM:

- Data Optimized Module - Release 0 (DOM-0) complies with revision 0 of the 1xEV-DO standard.
- Data Optimized Module - Release A (DOM-A) complies with revision A of the standard.

The DOM-A provides higher throughput with 3.1 Mbps peak rate on forward link and 1.8 Mbps peak rate on reverse link.

- **BTS**

**Some features and functions include:**

- Simultaneously supports 800 and 1900 MHz spectrum.
- Simultaneously supports up to nine carriers.
- Supports up to eight T1 or E1 backhaul links per CM-2 module, for a maximum of 16 T1s per BTS.
- Simultaneously supports CDMAOne, CDMA2000 1x and CDMA2000 1xEV-DO.
- The CM/CM-2, CORE/CORE-2, GPSTM/GPSTM Rb and CEMs work together to provide the digital functionality of a Metro Cell.
- The CORE and the CM provide the Digital Control Group (DCG) functionality.
- The CORE-2 and the CM-2 provide the enhanced Digital Control Group (eDCG) functionality.
- A Metro Cell supports up to two DCGs.
- Support for an operating mode, known as split-mode. In split-mode two DCGs are provisioned and each DCG operates as a separate BTS with associated FRMs and CEMs.
The CM provides the following functions:

• T1/E1 interface for backhaul connectivity to the Base Station Controller (BSC)
• Interface to the CORE module
• Maintenance and control
• Operations, Administration, and Maintenance (OA&M) of the CORE, CEMs and FRMs associated with the DCG
• Layer 2 Packet Switching
• Radio Resource Management
• Overhead Channel Management

The CORE provides the following functions:

• Fiber connectivity to the FRM
• Interface to the CM module
• Distributes forward and reverse link baseband traffic between CEMs and Single Frequency Flexible Radio Frequency Modules (SFRM)
• Provides connectivity between CM and CEM/FRMs

The Global Positioning System Timing Module (GPSTM Rb) provides GPS timing to the Metro Cell.

The CEM provides the following function:

• CDMA modem functionality

The FRMs provide the following functions:

• Conversion of baseband data to RF modulation
• Power amplification of forward-link RF signal
• Receiver for reverse-link RF signal

The CAM/ECM provides the following functions:

• Alarms interface for internal system components and customer assigned alarm points
• Identifies customer alarms through LEDs/PC GUI
• Environmental maintenance and control for the system

For 1900 MHz, the SPP threshold is restricted to a maximum of 1.5 dB due to regulatory compliance. Setting the SPP threshold beyond 1.5 dB has no impact. For 800 MHz, the MFRM-3 radio has been certified for an SPP threshold of up to 3.0 dB.
 ➢ **EVDO challenges**

- Continued radio link transmission
- Lower packet delay, lower jitter
- Higher packing efficiency for small packets over the air
- Higher capacity reverse link

 ➢ **Providers**

- Verizon
- Sprint
- Alltel
- Open mobile
- Claro

 ➢ **Vendors**

- Nortel
- Lucent
- Starent
- Airvana
- Cisco

 ➢ **Conclusion**

Today most of the telecommunication companies are trying to impulse the VoIP and Rev A number one task is to improve it, by doing that they improve the entire network and others application like online gaming, music downloads and files upload. Beside that because the Rev A has backward compatibility it saved some money to the company that upgrade to it.

EVDO has a solid demand on the market and that why most of the companies decide for that technology instead of HDSPA or WIMAX that is a new technology and it is too expensive.

The future of EVDO is a great one, with Rev-B ready to hit the market on 2009 and Rev C on development, offering better data rate and less latency in order to improve the network performance.

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