CDMA2000® 1xEV-DO Revision A (Rev. A) is best known for its advanced broadband speeds – peak download rates of 3.1 Mbps and peak upload rates of 1.8 Mbps. The technology also has a very low latency, on average less than 50 milliseconds, to support delay-sensitive applications including packetized voice over data networks (VoIP), and advanced Quality of Service (QoS) mechanisms which allow prioritization of individual packets based on criteria such as user or application type. This combination of broadband speeds, low latency and advanced QoS makes Rev. A an ideal platform for delivering delay-sensitive applications to consumer, enterprise, field service, first responder and public safety users.

Examples of these applications are push-to-talk (PTT) and push-to-X (PTX), a group of services that include push-to-video (PTV) and push-to-email. Even though other wide-area wireless data technologies can support PTT, their quality cannot always meet customer expectations. Rev. A is the first broadband wireless technology able to provide reliable PTT sessions on par with two-way radio technologies, such as iDEN®, as well as advanced PTX services. In fact, because of Rev. A’s superior performance, Sprint chose it to migrate its popular PTT services – Direct Connect, from its iDEN network to the higher capacity CDMA2000 Rev. A network. Some public safety organizations, including police and fire emergency units, are also increasingly turning to commercial Rev. A systems to support their group communication capabilities.

Another key advantage of Rev. A-based PTT is that CDMA2000 is a spread-spectrum technology, where signals are spread over a wide bandwidth. This design provides inherent security and reliability because it’s nearly impossible to jam, interfere with or eavesdrop during PTT voice communications. In fact, one similarity between Rev. A and most military communications systems is that they all have a spread-spectrum foundation. By comparison, 802.11 Wi-Fi and GSM-based technologies require encryption to be layered in order to thwart eavesdropping and other security breaches.

**PUSH FOR PRODUCTIVITY: THE BUSINESS CASE FOR REV. A PTT AND PTX**

Although some enterprises – such as construction companies – have their own two-way-radio equipment, increasingly many are using Rev. A PTT services. One reason is that Rev. A is readily available, more scalable and less expensive to manage than proprietary solutions. Companies no longer have to build and maintain their own expensive networks and management systems; instead, they can easily add or remove users online and pay a small monthly subscription for each subscriber.
Rev. A PTT and PTX services are also very robust and support business applications that voice-centric two-way-radio networks can’t. Users can set-up multiple distribution groups, with up to 100 users each, and manage these groups over the phone or online. In addition to pushing voice messages, they can push e-mail, photo images and real-time video to any number of the distribution groups. For example, a field worker can push an e-mail, picture or video from a construction site to colleagues in the office and warehouse, and alert them by pushing a voice message to them.

A key advantage of CDMA2000-based PTT and PTX is ubiquitous coverage. Many CDMA2000 operators have deployed Rev. A throughout their national networks, and in areas where Rev. A is not yet available, customers still can use their mobile phone to communicate, as well as other data services, on the CDMA2000 1X and EV-DO Release 0 networks, thanks to the backward-compatibility of the Rev. A devices.

There is a growing selection of Rev. A devices supporting PTT and PTX. In the U.S., Sprint is introducing phones from Sanyo, Samsung, Motorola and LG, and Verizon Wireless offers PTT multimedia phones by Motorola and a line of ruggedized G’Z One Boulder phones from Casio. In addition to PTT capabilities, these phones support voice calls and advanced applications including navigation, Internet access, music and video downloads and TV broadcast. Some of these phones are available at a retail price below $100 (USD).

SECURE PTT AND PTX FOR PUBLIC SAFETY

Many public safety agencies are looking to complement their own two-way-radio networks with CDMA2000 PTT and PTX services. This is because with these services, they can offload voice traffic from their network, which then is less likely to require upgrades to expand network capacity – a major expense for local, state and federal agencies.

Rev. A can support large numbers of users more cost effectively than legacy technologies. Rev. A also allows public agencies to enhance their effectiveness by providing a broader range of communication tools, such as accessing critical databases, downloading files, and capturing and sending photographs and video with digital signature, location and time stamps.