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The CDMA2000 Industry is Evaluating Techniques to Further Improve Performance of 3G Networks

Proposals Reviewed at the CDG's Technology Forum

COSTA MESA, Calif., May 9, 2006 (PRIMEZONE) -- The CDMA Development Group (CDG) (www.cdg.org) reported today that CDMA2000(r) operators and vendors gathered last month in San Francisco at the CDG's semi-annual Technology Forum to discuss new methods to expand CDMA2000 network coverage and capacity, and further improve quality. Some of the proposed techniques include interference cancellation, 4G vocoders, SIP header reduction, digital RF transmitters, cross layer optimization and mobile transmit diversity. These cutting-edge technologies can potentially increase the CDMA2000 network capacity by 35-50%, improve capacity utilization by 2-7 times and reduce content delivery time by 40-60%.

"As voice and data traffic increases and the demand for more bandwidth-intensive multimedia applications grows, operators are looking for new methods to expand capacity and improve the performance of their existing networks," said Perry LaForge, executive director of the CDG. "There are a number of innovative solutions available to CDMA operators. The Technology Forum and other CDG events are excellent venues for operators and vendors to discuss them."

At the San Francisco Forum, vendors presented a number of their latest products. For interference limited systems and systems near capacity, TensorComm reported that their Interference Cancellation product, when applied to the mobile baseband, can provide gains of up to 6 dB and can increase user data throughput by as much as 50%. Mobile Transmit Diversity solutions, such as Magnolia Broadband provides, can increase capacity from 35% -- 50%. LGE is also looking at interference cancellations techniques at the receiver side to achieve similar results. These solutions could provide carriers with CAPEX (capital expenses) and OPEX (operating expenses) savings as well as significant improvement in QoS and user experience.

Higher capacity throughput can also be achieved by use of multiple beams asymmetric azimuth antenna arrays. TenXc Wireless' solution deploys the use of spatial processing adaptive digital beam forming array antennas at the base station. Simulation results show that throughput per sector can be increased by 1.8 to 1.9 times by using "bi-sector" array antennas.

Vocoder technology has been improving at a fast rate, and the new 4GV vocoder from Qualcomm offers capacity enhancements of up to 40% compared to EVRC, without trading voice quality. This vocoder is optimized for VoIP applications for both narrowband and broadband applications on the 1xEV-DO Rev A architecture for superior wideband voice quality and capacity impact comparable to EVRC.

SIP header reduction to support delay sensitive applications is another technical enhancement. The current SIP message size is too large to meet call setup requirements for delay sensitive applications, such as PoC, VoIP, VT, etc. Nortel presented an access independent IMS-based solution that can meet these non-negotiable call setup requirements. By only sending the dynamic information, this technique will further improve throughput, as well as the user experience.

Cross Layer Optimization, provided by Venturi Wireless, addresses the challenges of IP over the wireless environment. The company is working on improving content delivery time by 40 -- 60% and to providing a consistent user experience necessary to drive the adoption of the latest multimedia services. Venturi says this optimization delivers better capacity utilization and 2 to 7 times improved throughput.

TCP is not able to optimally contend with the characteristics of the Internet and the characteristics of the air interface at the same time. An optimization solution provided by ByteMobile modifies and tunes TCP's transmission algorithms to perform better over the air. Dynamic data reduction optimization reduces the size of this data with a variety of techniques including but not limited to compression.

PulseWave RF discussed their Digital RF Transmitter technology that can achieve a cost reduction of 20% per BTS while providing PA that are smaller in size with lower power consumption.

Vendor presentations are available on the CDG Web site at http://www.cdg.org/news/events/CDMASeminar/060420_NetworkCap/index.asp.

About CDMA2000

CDMA2000 is the most widely deployed 3G technology, with 150 CDMA2000 operators in 68 countries, including 35 CDMA2000 1xEV-DO systems. There are more than 225 million 3G CDMA2000 subscribers. CDMA2000 has become the technology of choice for cdmaOne(tm), TDMA, analog and Greenfield operators, and is deployed in the 450, 800, 1700, 1900 and 2100 MHz bands. More than 1100 CDMA2000 devices are available on the market, including 217 1xEV-DO devices. More information on CDMA2000 is available on the CDG Web site at www.cdg.org.

About CDG

The CDMA Development Group is a trade association formed to foster the worldwide development, implementation and use of CDMA technologies. The more than 120 member companies of the CDG include many of the world's largest wireless carriers and equipment manufacturers. The primary activities of the CDG include development of CDMA features and services, public relations, education and seminars, regulatory affairs and international support. Currently, there are more than 500 individuals working within various CDG subcommittees on CDMA-related matters. For more information about the CDG, contact the CDG News Bureau at 714-540-1030, or visit the CDG Web site at www.cdg.org.

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