A Publication for **AT&T AUTOPLEX® SYSTEM 1000** *Users*

HANDOFF

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Comcast Switches To AT&T

contributed by Bob Haver and Barney Janish

Comcast Corporation's cellular unit has chosen AT&T to replace Motorola as its primary supplier of cellular network equipment. Under the $200 million contract, AT&T will rebuild Comcast Cellular's cellular networks in Pennsylvania, New Jersey and Delaware by replacing Motorola equipment with AT&T switching and radio equipment. The initial system includes approximately 300 Series II cell sites and four mobile switching centers, each with a 5ESS-2000 DCS. The system cutover is scheduled for August 1995.

Comcast Cellular chose AT&T because our equipment is more flexible than Motorola's for offering new services. Donald Harris, Comcast Cellular's President, told *The Wall Street Journal* that as the company moves into advanced digital services, AT&T offers "a more flexible design" for a full range of new phone services using North American digital technologies. Comcast Cellular's preference is to sell services using CDMA. But "if we have to move quickly," AT&T's gear will also support the more mature TDMA, which expands network capacity by transmitting signals in time slots, Mr. Harris said.

Jim Brewington, President of Network Wireless Systems, said "Comcast Cellular's decision to choose Network Systems to replace Motorola was a major win for AT&T. Our system, based on North American standards, enables Comcast Cellular to offer its customers a rich set of features, excellent voice quality, and lower per-subscriber costs."

Significant network growth and the implementation of CDMA are anticipated over the next year. ■

AT&T Network Wireless Systems

HOT TOPICS
This Issue

A World Without Limits...Explored A New Savings Opportunity On AUTOPLEX® System Software Optional Features From AT&T Network Wireless Systems

Build Your Network And SAVE!! Substantial Volume Discounts *(Up to 50% off list price)* by Elaine Cannon

While the wireless world evolves to face the challenges of tomorrow, AT&T recently provided its customers with the opportunity to begin preparing their networks today. *A World Without Limits*, a promotional program running through July 31, enabled customers to focus on key strategic application areas. These included Fraud Prevention and Protection, IS-41 Networking & Roaming, Subscriber Convenience, Location-Dependent Billing, Network Interconnect, and Service Quality.

Network growth plans for cellular service providers and PCS operators are all unique and at different stages of development. But no matter what the growth stage, *A World Without Limits* provided the opportunity to make the RIGHT CHOICE to meet specific system needs. Some cellular and PCS service providers required all features in each of the application groupings, while others have already purchased a subset. In any case, many customers realized savings from a *A World Without Limits*.

For more information about our products, contact your AT&T Network Systems Account Manager. ■

AT&T Develops Interoperability Terminal Test Program

by Doreen Salzano

Mobile Station — Base Station Compatibility Group team members (left to right), Fran Shinderman, Craig Tanis, and Steve Werden, Team Manager, working in the Terminal Interoperability Lab in Whippany, NJ.

AT&T has developed a new program for testing terminals with our infrastructure equipment. This program is designed to support the testing of new technologies and features to determine compatibility prior to commercial deployment. The purpose is to address interoperability issues and work to resolution in a timely manner.

The testing is conducted in a new laboratory facility located in Whippany, NJ. AT&T develops test plans based on industry standards and end- to-end feature testing, including human factors.

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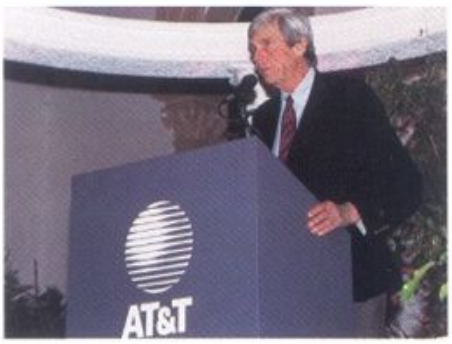
AT&T Boca Raton Seminar Focuses On Helping Wireless Providers Improve Marketing Results

by Marie Ann Sutera and Bob Kupec



Well-known author George Plimpton speaks at a recent AT&T customer marketing seminar in Boca Raton, FL.

AT&T hosted its fourth annual customer marketing seminar April 24-26 at the Boca Raton Resort in Florida. This year's theme was "Innovative Wireless Solutions;" the popular seminar drew 80 attendees.

Customers were greeted at an informal reception in the resort's courtyard on Monday evening, April 24. On Tuesday, Eric Spurrier, Director of Market Planning and Operations, welcomed participants to the seminar. Scott Erickson, Vice President of Marketing, gave the opening address.

Well-known industry analyst and spokesperson Herschel Shosteck gave a presentation titled *"The Coming Digital Revolution."* He was followed by MIT's Richard Solomon, who discussed *"The Digital Communications Revolution."*

Wednesday was filled with sessions. Speakers and topics included:

- Todd Giacobbe and Maria Palamara, AT&T Product Marketing, presented *"Computing Effectively in a New PCS Era."*
- Charlie Taney, Chief Operations Officer, Foote, Cone, and Belding Advertising Agency, spoke on *"Building Brand Equity."*
- Dave Poticny, Vice President of PCS and Fixed Wireless Systems, presented *"New Wireless Technologies."*
- Richard D'Aveni, author of Hypercompetition, spoke on *"Managing the Dynamics of Strategic Maneuvering."*

On Wednesday afternoon, the seminar ended with dinner and a motivational talk by author George Plimpton. Network Wireless Systems looks forward to seeing our customers again at next year's seminar, which will be held at the Silverado Resort in Napa Valley, CA. ■

Interoperability Terminal Test Program

continued from page 2

Three forms of testing are being conducted:

Incremental Validation – As terminal manufacturers develop new products, we will work with them to test their compatibility with our network infrastructure. This service allows testing to occur during development rather than after the product is commercially produced. This detects problems early, speeding the introduction of new terminals.

Compatibility Evaluation – the formal testing of commercial grade terminals and network equipment to determine interoperability prior to deployment. The test plans are reviewed by the terminal manufacturers and the customers for recommendations that are considered for incorporation. Once the testing is complete, the results will be documented in detail including the hardware and software version of the terminal and infrastructure products. Customers can obtain the results and use these results in terminal product purchase selection decisions.

Problem Isolation – this process identifies the cause of a customer's field problem through laboratory testing. AT&T supports the terminal manufacturer in the determination of corrective action.

AT&T tests terminal products with our infrastructures prior to commercialization so that quality terminal products are available for our customers. Although the testing is conducted to identify any incompatibilities, AT&T does not warranty the terminal product features, functionality, or availability. Each terminal manufacturer provides a product warranty that should cover problems with their products. ■

New 13Kbps CDMA Vocoder Enhances Voice Quality In Wireless Systems

By Emerson Cohen

A new AT&T 13 kbps CDMA Vocoder, scheduled for introduction early in 1996, will enable service providers to offer their wireless subscribers enhanced voice quality.

A higher speech coding rate, combined with the inherent advantages of CDMA, enables wireless networks using the new vocoder to achieve voice clarity equivalent to landline toll quality. The 13 kbps vocoder's higher bit rate encodes more of the original speech, resulting in extremely accurate digital representation of voice conversations.

8 or 13 kbps vocoders available

AT&T's product line includes both an 8 and a 13 kbps CDMA vocoder. Currently a Mobile Switching Center (MSC) can support either device. In 1996, the MSC will be capable of supporting both devices simultaneously.

These variable rate vocoders adjust their data rate based on the level of voice activity, reducing the amount of bandwidth required for circuits between the cell site and MSC. This also reduces spectrum usage between mobiles and base stations.

AT&T's unique centralized vocoder architecture concentrates encoded voice traffic on digital packet pipes between the cell site and MSC. The result is more efficient use of vocoders and significant savings based on reduced need for landline connections between cell sites and switching centers. CDMA traffic is concentrated 3.5 times vs. analog service trunks.

The standard 8 kbps CDMA vocoder allows service providers to offer digital voice quality in situations where capacity is the primary concern. The 13 kbps vocoder, which requires slightly more bandwidth, results in a premium service with landline voice quality. ■

AT&T Wireless Professional Services Ensures Rapid Deployment and Optimization of PCS Networks.

by Sandy Gertner

With the PCS license auctions and increasing competition, AT&T's NWS Wireless Professional Services (WPS) team is focusing on helping service providers offer reliable, cost-effective wireless service.

WPS has a wide range of services and capabilities to help customers set up, maintain, and add value to PCS networks. These include our cellular optimization, data services, microwave services, site acquisition, construction management, and program management. Customers can retain AT&T WPS to provide any of these services or deliver a complete end-to-end solution.

For more information, contact Sandy Gertner at (201)386-4246. ■

TECH•TOPICS:

Digital Voice Quality

by Reed Thorkilsdsen

Three major elements that affect voice quality in wireless systems are RF coverage, call processing, and speech coding.

RF factors influencing voice quality include antenna patterns, transmitted power, and adjacent and co-channel interference. For call processing, the primary factors are setup times and delays.

High-capacity wireless systems have speech coders operating at bit rates of 13, 8, 6.5, and even 3.3 kbps. By comparison, the toll network does speech coding at 64 kbps. Some cordless phones operate at 32 kbps.

Achieving toll quality at the lower bit rates of wireless systems is a formidable technical challenge. One solution is to incorporate a higher-rate speech coder into the wireless infrastructure. The AT&T CDMA system will be available with a 13 kbps speech coder early in 1996. This will provide voice quality equivalent to toll standards.

As wireless systems mature, they are moving toward toll-quality voice. In the near future, wireless networks may even be able to provide voice quality that is high fidelity. ■

Columbus Works Shaves 6 1/2 Weeks Off IMS Production Schedule

by Bob Laskoski and Caroline Hubley

AT&T's Columbus Works has reduced production time for the Interprocess Message Switch (IMS) cabinet from 11 weeks to 4 1/2 weeks. According to Ival Shields, co-manager of the Columbus Works, the IMS is shipping ahead of schedule, with a goal of reducing production time to 2 1/2 weeks by the end of this year.

The reason for the smooth, successful production of the cabinets lies in the ability of Columbus Production, Design, Engineering, and Testing and the NWSBU cross-functional organizations to work as one team. Together, this team strives for complete customer satisfaction, and it has paid off.

The Columbus Works is a one-stop shop for IMS orders. Cabinets are shipped to the customer direct from the factory, fully configured and tested to specifications. "Our new procedure saves time, cuts costs, and increases customer satisfaction," notes Shields.

Once the IMS cabinet is received at the customer site, AT&T personnel install inter-system cable and the appropriate network adapter interfaces, integrating the switch with the customer's network.

Previously, IMS cabinets made three interim stops at various locations before shipment. "This caused unnecessary shipping, excess inventory, and handling fees, not to mention the time the cabinets spent en route to and from the factory and product centers," says Shields.

This new streamlined production process will also be applied to the smaller IMS cabinet, currently under development. These cabinets, which house ten fully redundant nodes, are targeted for the Wireless Systems small market. ■

AT&T Wireless Professional Services Helps Service Providers Add Microwave Capabilities *by Sandy Gertner and Chris Conroy*

AT&T's NWS Wireless Professional Services (WPS) team now offers a full range of services designed to help customers design, build, install, and maintain microwave sites.

"WPS engineers can apply Network Design and Transport Planning tools to recommend the most economical and efficient network topography to meet specific market requirements," says Chris Conroy, Market Development Manager.

Once the customer approves the network design, AT&T WPS can procure all resources, schedule implementation, install and test the network, and provide network optimization and maintenance as required. Other areas where WPS can offer assistance include site acquisition and project management.

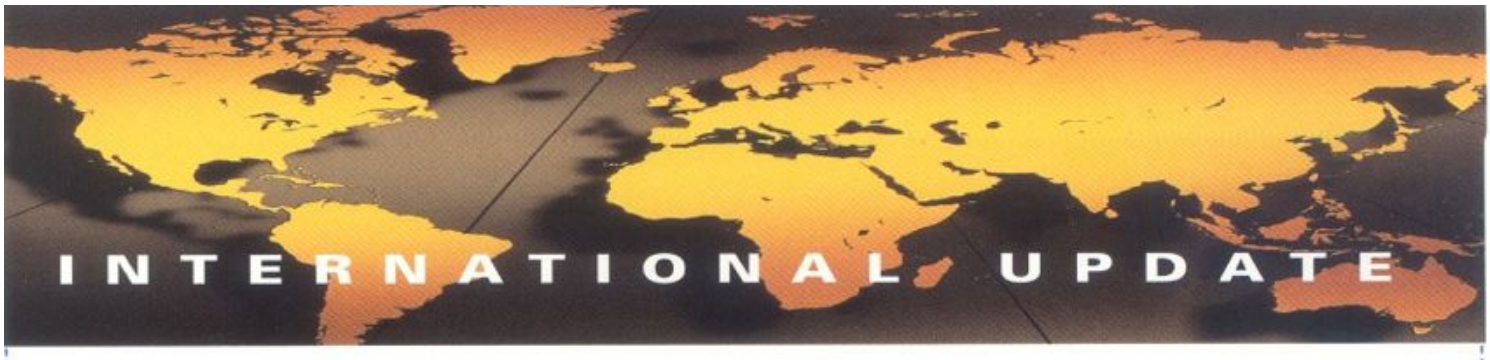
Microwave and PCS

As PCS networks evolve and grow, digital microwave radios will increasingly be used as a cost-effective means of interconnecting cell sites with switches. WPS engineers are now working closely with microwave manufacturers to ensure compatibility between their digital radios and AT&T's PCS minicells.

Over the past 25 years, AT&T has designed and built thousands of microwave sites for its own communications networks and hundreds of customers. In addition to microwave and PCS, other areas of expertise include cellular, paging, and Enhanced Specialized Mobile Radio (ESMR).

For more information, contact Chris Conroy at (908) 221-8578. ■

Columbus Works' IMS Team Members: (front row seated - left to right) Jim McDonald, Gary Mexicott, Jerry Preece; (middle row standing - left to right) Marlene Moore, Edna Stephens; (back row standing- left to right) Jim May, Ken Scott, Bill Huckins, Jack Collins, Ival Shields, Bob Murphy



AUTOPLEX Makes Debut In Africa

by J. H. Merkle

AT&T has successfully implemented the first phase of an AUTOPLEX Wireless Communications System slated to provide coverage for the southern region of Ghana, Africa.

This initial phase of the project focuses on Accra, Ghana's capital. The system was placed in service by Celltel Ltd. on March 15, 1995.

An AUTOPLEX Cell Site is unloaded in Ghana, Africa.

Doing business in emerging markets is always challenging. The NWS Ghana Team met that challenge and succeeded in providing a system that achieved high praise from the government plus business and residential customers.

According to Celltel Chairman, Prince Kofi Kludjeson, the ability of Celltel to meet the customer's need to communicate through an AT&T system that provides high quality voice and data with proven reliability, will provide the opportunity for Ghana to grow economically.

Ghana has a stable government and a policy of supporting business growth. The network's ability to meet subscriber demand will significantly improve the telecommunications infrastructure in Ghana.

In addition, the operation of this network has generated strong interest in the AT&T AUTOPLEX System throughout sub-Saharan Africa. ■

Prince Kofi Kludjeson conducts initial testing of new AUTOPLEX System.

A Russian Republic Capital Selects AT&T Cellular System

by Kevin Handerson, David Hanley, and Lou Sobotka

Global TeleSystems Group Inc., an independent developer and operator of telecommunications companies in the emerging Eurasian market, and AT&T have brought some of the world's most sophisticated communications technology to Cheboksary, a republic capital east of Moscow. Their first cellular network is based on AT&T's AUTOPLEX 1000 Wireless Subscriber System (WSS).

WSS merges the advantages of wireless technology with traditional central office capabilities. WSS is a simple, affordable solution that allows service providers to rapidly provide either basic telephone service or entry level cellular service for individuals and businesses. For service providers, WSS easily and economically expands to a fully featured cellular network.

Getting the system installed and operating in Cheboksary, required a strong team effort among sales, product management, project management, development, and many other groups. The initial stage of the project culminated in a call to the Minister of Telecommunications in Moscow. Additional cities in Russia are scheduled to come on line this year, with more planned for 1996. ■

AT&T Helps PILTEL Provide TDMA Service In Phillipines

by Lito Anciano

Pilipino Telephone Corporate (PILTEL), the leading cellular service provider in the Philippines, has ordered new equipment from AT&T to expand its network.

The PILTEL AMPS network, in operation since 1991, is comprised mostly of AT&T equipment. PILTEL formally launched commercial TDMA service in August 1994. The new equipment focuses on enhancing the network's TDMA capabilities.

AT&T's complete family of Series II cell site products — including the Series II Cell Site, Series IIe Compact Base Station, Series IIm Minicell, and Series IImm Microcell — offers state-of-the-art digital cellular capacity based on Telecommunications Industry Association (TIA) standard IS-54 Time Division Multiple Access (TDMA) technology.

PILTEL selected AT&T TDMA equipment for its advanced features and cost-effectiveness in providing additional subscriber capacity. The enhanced TDMA service will also cover the northern mountain resort city of Baguio. ■

Sales Update Session Held In Sao Paulo, Brazil *by Terri Ascolese*

On May 8 - 9, members of NWS Market Planning and Operations, led by Eric Spurrier, and Series II Product Management presented a two-day Sales Update Session in Sao Paulo, Brazil.

Thirty people, mainly from SID–AT&T's strategic vendor in Brazil–attended the session to learn about Series II, our Small Cell Strategy, Wireless Subscriber Systems, the 5ESS®-2000 Switch DCS, CDMA, and CDPD.

The presentations were developed specifically for the Brazil sales office. Topics addressed in the session included marketing and competitive product information.

Following the Update Session, customer presentations were given to Telemig in Belo Horizonte, Telesp in Sao Paulo, and Telerj in Rio de Janiero. ■

Attendees at the Sales Update Session in San Paulo, Brazil pause momentarily for a photo by Dan Loftus, NWS Product Marketing Manager.

AT&T To Feature "Innovative Solutions" At Telecom '95 *by Frank Kowal*

Telecom '95 will occur in Geneva, Switzerland on October 3-11, 1995. This event, sponsored by the International Telecommunications Union (ITU), is the "premier" communications exposition in the world. The expected audience will be greater than 150,000 attendees, including more than 100 PTT ministers and over 100 director generals of PTT administrations.

The AT&T theme, "AT&T. . .Innovative Solutions. . .Anytime, Anywhere," will promote, position, and demonstrate AT&T as the only global enterprise which both develops and provides state-of-the-art integrated solutions for service providers, multinational corporations and other end users while operating a global intelligent network.

AT&T Network Wireless Systems will exhibit an applications platform that underscores our commitment to being a solid force and supplier in GSM, CDMA, fixed wireless and emerging technologies. AT&T product teams and marketing managers are hard at work in creating a stellar, world-class display. ■

Upcoming 1995 Industry & Customer Events

NAFTA

- CALA SALES UPDATE
  August 30-31
  Miami, Florida

- PCS '95
  September 21-23
  Orlando, Florida

- ITCO
  October 24-26
  Phoenix, Arizona

- WIRELESS AMERICA '95
  November 28-30
  Miami, Florida

AT&T Speaker Support Activities

September 21-23
Cellucom
St. Louis, Missouri

October 3-4
CDMA Developers Fair
San Francisco, California

October 12-13
CDPD Solutions Showcase
San Francisco, California

October 16-19
Comm Forum
Chicago, Illinois

International

- THAI TELECOM '95
  August 4-7
  Bangkok, Thailand

- TELECOMM '95
  August 14-17
  Buenos Aires, Argentina

- COMDEX
  August 15-18
  Sao Paulo, Brazil

- MADE IN USA
  October 3-7
  Johannesburg, South Africa

- TELECOM '95
  October 3-11
  Geneva, Switzerland

- THE INFO WORLD
  October 20-24
  Shanghai, China

If you have suggestions or ideas for future HANDOFF articles, please call Loretta Keggan at (201) 386-3259.

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