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10 MOMENTUM WILL BE MASSIVE
Wireless telemetry is a complex and sometimes confusing application area. As our theme article shows, Mobitex is already widely used in telemetry applications and has significant potential in several areas. Momentum continues to build, and wireless telemetry will be a market with vast opportunities.

14 WIRELESS ENHANCES SECURITY
Korean Mobitex operator Intec Telecom and its parent company CNI are ramping up production of a new device that will be offered to hundreds of thousands of business and residential customers by the country’s largest security company. With 30,000 units already on order, Intec Telecom is preparing to build a new value chain based on wireless telemetry for security and surveillance services.

16 ELECTRICITY SUPPLY EXACTLY REGULATED
Dutch utility company Nuon is operating in a newly deregulated energy market in which it profiles itself as a green energy company focused on renewable power sources. A new Mobitex application supplied by RAM Mobile Data and Romesq allows Nuon to regulate the electricity supply exactly to ensure that no electricity is wasted and that power is managed efficiently.
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TECHNOLOGY: LEVERAGING THE POWER OF WIRELESS HANDHELDs
Wireless handhelds are set to drive Mobitex growth even faster. These small yet powerful devices offer not only wireless messaging and PDA applications. They provide a platform for a wide range of innovative new applications and are supported by tools for rapid application development.

OUTLOOK: APPLICATION STOREFRONT FOR WIRELESS SHOPPERS
Building on the success of its Application Developer Program, which was initially designed for Mobitex and now has more than 6,000 members, Cingular Wireless has launched the Application Storefront. This innovative approach to marketing wireless data allows Cingular Wireless customers to buy mobile applications on the web and provides developers with a convenient marketplace for their applications.

WANDA WAVE
Arriving safe but somewhat wet after a perilous journey, Wanda learns that wireless devices may not work so well in boats.

LINKS
Ericsson AB
S:t Sigfridsgatan 89
S-412 86 Gothenburg
Sweden
phone: +46-31-344 0000, fax: +46-31-3446033
Mobitex information:
Mobitex e-mail addresses at Ericsson:
Marketing and sales mobitex.info@erv.ericsson.se
Customer support mobitex.tac@erv.ericsson.se
Mobitex training center mobitex.training@erv.ericsson.se
Ericsson links:
Ericsson www.ericsson.com
Ericsson Mobile www.ericsson.com/mobile
Mobitex operators featured in this issue:
Cingular Wireless, US: www.cingular.com
Intec, Korea: www.intectelecom.com.co.kr
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UNT, Brazil: www.unt.com.br

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Good Technologies, US: www.goodlink.com
Initial City Link, UK: www.city-link.co.uk
Mobitex Operators Association: www.mobitex.org
Nuon, Netherlands: www.nuon.nl
Palm, US: www.palm.net
Progenie, UK: www.progenie.co.uk
Research In Motion RIM, Canada: www.rim.net
Romesq, Netherlands: www.romesq.nl
S1, Korea: www.s1com.co.kr
I am honored to be given the opportunity, in this issue to replace our traditional Publisher’s Note with my own Editor’s Note and to introduce our new publisher, Anders Baaz, who was recently appointed as general manager for Mobitex. Instead of introducing this issue of Mobile Data Magazine, Anders agreed to be interviewed for our Guest Profile section.

Anders has been working with Mobitex for many years. As our Guest Profile shows, Anders will be an excellent ambassador for Mobitex with a dedication to his job and a knowledge of the product that will impress you. Our new manager for Mobitex promises that it will be business as usual, while vowing to take Mobitex to even greater heights.

In these turbulent times, investors, analysts, journalists and other industry observers are taking a more cautious view and becoming even more critical in their evaluation of operators and their business model. For those of us working with Mobitex, this trend changes our view of the market in some respects.

In more and more markets around the world, there is a new interest in Mobitex. Many of the people outside the Mobitex community that I talk to are starting to realize that applications and how they solve business needs are driving the market and that Mobitex really has some key advantages.

The telemetry theme that we have chosen for this issue provides an excellent illustration of this point. It is one thing to envision that a wireless device can be used in thousands of ways for remote control and monitoring. Providing the end-to-end solutions that customers want and that operators need to generate revenues is an entirely different proposition.

It is also gratifying to note that interest all around the world is very high. Everyone in the Mobitex community is working very hard on various types of telemetry applications, which promise to be a new growth market. Unlike many applications that require special market prerequisites, telemetry applications, whether for regulating water or electricity supplies or monitoring or surveillance services, have a universal appeal and can often be introduced in new markets with few modifications.

As this issue of Mobile Data Magazine goes to press, the Mobitex Operators Association is gathering in Korea for its annual meeting and conference. As always, the MOA meeting promises to be both informative and rewarding and features many new Mobitex solutions. Korean Mobitex operator Jumsim Telecom, which will be hosting the meeting, has pioneered several innovative Mobitex applications and services, including interactive gaming, mobile marketing and a new security and surveillance service that you can read about in this issue. Its parent company CNI is also launching a new generation of wireless handsets that will be featured at the MOA meeting.

We look forward to a conference that will be filled with brand new solutions for Mobitex.

Ingrid Wallgren
How long have you been working with Mobitex?
I have been working with Mobitex for nine years. I started in 1993 at the Technical Assistance Center, and from 1994 to 1999 I was manager for customer support. In 2000, I became vice manager for Mobitex and assumed greater responsibility for the division’s internal operations. Last year, as a member of the management team, I also assumed responsibility for Network Technology.

How will this change in management affect Ericsson’s strategy for Mobitex?
Our business is well managed and does not require any radical changes. We will continue to follow the course that we have set. The roadmap previously established for network enhancements is retained.

What changes do you want to make?
Apart from internal changes intended to increase efficiency, my most important priority is to further increase our customer focus by moving down the value chain and trying to identify customer value at every step. Customer requirements must be foremost in everything we do.

What are Ericsson’s goals for Mobitex going forward?
The primary goal for Ericsson is naturally to continue pursuing the Mobitex business strategy that has been so successful in recent years during which we have been able to combine market growth with good profitability. We also want to retain close relationships with existing customers and to help them reduce operational expenses, while at the same time improving and growing their business. Mobitex is an attractive technology in today’s industry, and we also believe that several new markets can be opened.

To broaden our customer base we are currently working to increase support for regional semi-private networks. This strategy is well anchored among management.

How is Mobitex positioned in Ericsson’s product portfolio?
Mobitex is Ericsson’s narrowband technology for dedicated mobile data networks. As a messaging technology and a technology for mobile Internet access, Mobitex has broad appeal, but there will always be important niche markets that require highly reliable communications and in which Mobitex will be the most cost-effective solution.

How has Mobitex been affected by the telecom crisis?
The difficult conditions in the telecom industry have naturally had an effect on Mobitex, although this has been less than might be expected. The Mobitex organization is strong, and we have retained our expertise. We have somewhat less resources, but more competitors. Mobitex remains a bright spot in the telecom industry. Over the past few years, the thrusts to Mobitex have become less formidable, and a vacuum has arisen that we intend to fill.

What strengths do Mobitex operators have?
There are many successful Mobitex operators today, and they all have one thing in common. They have very well-conceived business plans that are well matched to market requirements. Mobitex operators understand wireless data and the importance of offering end-to-end solutions. Mobitex networks are not only growing in terms of the number of subscribers. What is more important is that traffic volume is growing even faster and that the networks themselves are able to support this growth.

What is required of Mobitex and the companies working with Mobitex for continued growth?
Everyone working with Mobitex needs to make sure that they are focused on solutions and not technology. Success and continued growth can only be achieved by offering end-to-end solutions that deliver real business value. The Mobitex community is unique in this respect, because this is a lesson that many people learned long ago, but we can certainly become even better at delivering value to the customer.

Mobitex networks have been in commercial operation for more than 15 years. What will Mobitex be like in 10 years’ time?
No one has a crystal ball, so we naturally don’t know what kinds of applications there might be in ten years’ time. Mobitex will definitely remain a viable technology for at least ten more years, however. There are networks in which equipment installed ten or more years ago is still operating and using the latest system software. Many operators have business plans that extend as much as ten years into the future, and Ericsson’s own roadmap for Mobitex has nearly the same perspective.

What has surprised you the most in the development of Mobitex over recent years?
The commitment and excitement that people throughout the Mobitex community feel about Mobitex is in many ways the most remarkable development. The recent transfer of ownership of the Dutch Mobitex network to the management of RAM Mobile Data is yet another example of the commitment and enthusiasm that Mobitex instills in people.

How will Ericsson work with MOA?
The Mobitex Operators Association is an important forum that Ericsson has always supported. MOA has a very important role to play in promoting awareness of Mobitex while handling technical issues and administering the Mobitex Interface Specification. MOA has to provide value for the operators by providing guidance and expertise that will help them to develop their business. At the same time, operators must influence MOA by showing what is needed for business development and how Mobitex can be promoted in the marketplace. Ericsson sees MOA as an important partner for its business and technology development and takes as a role as MOA as its status as an associate member allows.

What types of partnerships are important?
All types of partnerships that deliver value to the customer are important. However, these do not have to be formal partnerships. As everyone working with Mobitex recognizes, wireless data applications and end-to-end solutions present a very complex value chain in which no single supplier can provide all of the components. Delivering successful Mobitex applications requires working together. Ericsson works closely with a number of companies in the Mobitex community and always welcomes opportunities to deepen relationships, particularly with developers and modem suppliers.
If you have a truly tremendous product, what better a way to spread the news than to put the word out on the Grapevine? That’s exactly what Mobitex operator Transcomm UK is doing with its new Grapevine service for mobile workers and professionals running on the 400 MHz version of CNi’s TWM3.

“Email has become an integral part of daily life, and we believe that all businesses deserve easy mobile access to their email and company information. You really do suffer if you cannot access your email while on the move,” says Adrian Nield, business development director at Transcomm UK, adding that the first orders in advance of the official launch have already been received from the emergency services and public transport sectors based on an extremely successful market trial.

The market trial included a beta test earlier this year with 100 users who showed an overwhelming 88-percent acceptance of the service. Apart from helping Transcomm to refine the applications, documentation and packaging of the new service, the market trial produced some surprising results. Among these was that the WML micro-browser and WAP push service being bundled with Grapevine were nearly as popular as the email service.

“There is no question that users also want to access other information while on the move. With a wireless PDA that has a screen that is much larger than a phone and displays WML pages more attractively and with greater information content, it now becomes convenient to do so,” observes Jason Railton, software development engineer at Transcomm who has been working with application developers for the UK version of the TWM3. (See separate article on page 18.)

POWERFUL SERVICE AND FEATURE-PACKED WIRELESS PDA

As offered with the Grapevine service, the TWM3 wireless handheld is small enough to fit in a pocket, yet powerful enough to keep users in touch wherever they are. Standard PIM applications include Memo, Today, Date Book, Address Book, Schedule, Address Book, Schedule and To Do. There are also various utilities, such as currency and measurement converters, and several games. Most important of course, are the wireless communication applications, which are a POP3 email client, a WML micro-browser and a Push Box for WAP messages.

Security, which is intrinsically high in the Mobitex network, has been enhanced in several ways for Grapevine. The wireless PDA itself is protected by a PIN code and can be configured so that the code must be entered each time it is switched on or awoken from sleep mode.

The wireless PDA has no SIM card that can be stolen and no hacker-accessible public IP address, since the Mobitex MAN number is used for addressing. All Grapevine users are a closed user group (CUG) on the network and CUGs can be used to further restrict access to members of an emergency service, for example.

Grapevine has generated considerable excitement even before its official public launch, which is scheduled for October. Priced at GBP 249.95 for the TWM3 and GBP 29.95 per month for the Grapevine service, Grapevine will surely be an immediate success as satisfied users begin spreading the word.
 Mobitex is a packet data network that is our ‘here and now’. It supports both custom and off-the-shelf solutions for enterprises. But the wireless data world is evolving into the future, and the solutions will shift in response. There will be certain customers and situations where the Mobitex network is the optimum network in terms of functionality, economics and applications. And we will have it. Other customers may need a different type of solution – one that involves GPRS and EDGE – and we will have that as well. This ability to provide the best network for a particular need, will be unique to Cingular and will be a significant advantage to us,” noted Carter.

Major announcements at WAVE 2002 included Cingular’s new Application Storefront, Xpress Mail GoodLink Edition and a new handheld from Good Technology, a Cingular Best Solution award for Discrete Wireless and a number of innovative new applications from the Korean operator Inner Telecom, all of which are described elsewhere in this issue.

Modem usage and applications of WAVE 2002.

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**NETWORK UPGRADE IN CHILE**

In August 2001, the Mobitex network in Chile formerly operated by CTC was awarded to Interexport Telecommunications. Mobiltel S.A., the company formed in January the same year to operate the network, continued to invest heavily in the upgrade is complete, the

**CUTTING EDGE IN PARCEL DELIVERY**

Initial City Link, a high-tech delivery company with a fleet of 1,500 delivery vehicles and 70 locations throughout the UK, has selected Transcomm’s Mobitex network as the preferred wireless data network for tracking parcel deliveries. Under the agreement, City Link’s entire vehicle fleet, already fitted with handheld scanner products, will use real-time wireless data to track parcels. As the parcel market has matured, City Link has continued to invest heavily in technology to give it the cutting edge in parcel delivery.

“Wireless data is of increasing importance to the parcel delivery sector and Transcomm’s Mobitex network empowers City Link to make available up-to-the-minute parcel delivery information to its customers due to its inherent reliability,” says Transcomm’s managing director Rich Pullin.

Customers can easily track parcels and access an image of the Proof of Delivery receipt on City Link’s website. The parcel delivery information, which is continuously updated as City Link’s personnel scan the bar codes on each parcel handled, contains comprehensive information about the job status, including scheduled time of delivery.

“The Mobitex network proved to be far closer to our requirements than other wireless technologies, such as GPRS, because in a business such as ours, where time and reliability are of the essence, it makes sense to use a reliable and robust network,” says Alec Cormack, IT director of City Link.

**NEW DUTCH OWNERS ARE ON THE HORIZON**

Earlier this summer, RAM Mobile Data was acquired by management. Ownership of the Dutch Mobitex network, which was acquired in 2000 by KPN Mobiel, has now been transferred in full to Joachim Kaarsgaren and Dirk Faber, who are both the new managing directors of the company. The company will also retain the name RAM Mobile Data.

KPN Mobile and RAM Mobile Data are facing new business conditions as a result of the dramatic changes that have occurred in the telecom and IT industries over the past two years. In making this divestment, KPN Mobile expresses great confidence in management and staff and a firm belief in the Mobitex operator’s expertise and market opportunities.

“This transfer of ownership gives us the opportunity, as an independent company, to continue pursuing our established business strategy and to provide even better service to customers. At the same time, RAM Mobile Data will continue to work closely with KPN Mobiel with regard to GPRS and the forthcoming UMTS services. The RAM Mobile Data name will continue to distinguish us as a supplier of professional services that give us a unique position in the market for business-critical wireless applications,” say Joachim Kaarsgaren and Dirk Faber.

For these old hands, running RAM Mobile Data will thus be business as usual as they pursue their successful strategy and work even harder to provide professional service for both new and established customers.

**PARKING PAYMENT MADE EASIER**

Like most large cities, Rotterdam in the Netherlands has a parking problem. For shoppers, visitors or people carrying out their business, finding a parking space is often difficult. Parking in the city center can also be expensive, but the Rotterdam authorities are at last making it easier to pay for parking.

Since January 1st, Pay & Display parking machines in Rotterdam accept payment from special chipkey cards. To offer users more alternatives, the City Surveillance department also wants to enable payment by credit card. For this reason, a pilot project has been started involving 250 parking machines.

As part of this pilot project, the department also wanted to simplify collection. Previously, parking inspectors were forced to empty each machine manually by using a special card and performing a lengthy series of operations. Instead, the authorities wanted an alternative that would computerize electronic collection and monitoring.

The Mobitex network operated by RAM Mobile Data was selected for the project. As a result, parking machines have a wireless connection with the City Surveillance department’s computer system. This has several benefits. Staff can empty a machine remotely via computer, spot breakdowns and implement parking rate changes. If the project is a success, credit-card payment will be accepted and Mobitex will be used in parking machines throughout the city.

**APPLICATIONS CURRENTLY RUN ON MOA DATABASE**

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**THE MOA ANNUAL MEETING & CONFERENCE IN SEOUL**

The agenda for the MOA meeting taking place at this magazine goes to print is shaping up to be one of the most diverse and interesting that MOA has ever presented. Topics will range from new product introductions, insight into successful Mobitex applications, examination of new business plans and marketing strategies as well as specific information about forthcoming Mobitex terminal products. A full report from the meeting will be provided in the next issue of Mobile Data Magazine.
In August 2001, the Mobitex network in Chile formerly operated by CTC was taken over by Interexport Telecommunications. Mobilink S.A., the company formed in January the same year, is now running the network in Chile formerly operated by CTC Startel was taken over by Interexport Telecommunications. Previously, parking inspectors were forced to stop by every machine manually to empty each machine. The transfer of ownership gives us the opportunity, as an independent company, to continue pursuing our established business strategy and to provide even better service to customers. At the same time, RAM Mobile Data will continue to work closely with KPN Mobile with regard to GPRS and the forthcoming UMTS services. The RAM Mobile Data name will continue to distinguish us as a supplier of professional services that give us a unique position in the market for business-critical wireless applications,” says Joachim Kaarsgaren and Dirk Fabels.

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“The Mobitex network proved to be far closer to our requirements than other wireless technologies, such as GPRS, because in a business such as ours, where time and reliability are of the essence, it makes sense to use a reliable and proven technology to give it the cutting edge in parcel delivery.”

“We,give our customers the delivery information at the right moment and the right place,” adds Alec Cormack. “By using real-time data, we are able to support our clients with real-time services, such as GPRS, because in a business such as ours, where time and reliability are of the essence, it makes sense to use a reliable and proven technology to give it the cutting edge in parcel delivery.”

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Are you satisfied with the service provided by the vending machine in your office? Have you checked the power consumption in your home on the web and adjusted your appliances to take advantage of non-peak electricity prices? Would the wireless device in your pocket notify you if your car was being stolen? Could the heat in your country house be automatically switched on earlier if you manage to beat the rush-hour traffic out of the city?
Welcome to the strange world of wireless telemetry where machines can talk to each other and seem to have a mind of their own. Confusing as it is complex, wireless telemetry can be defined as automatic transfer of data between two machines over a wireless network for the purpose of monitoring or control. As can be understood from this definition and the examples above, wireless telemetry is a technology that can be applied in many areas.

**MOMENTUM CONTINUES TO BUILD**

When the Yankee Group surveyed the wireless telemetry field in 2000, it was characterized as “moving faster than a speeding glacier.” If growth in this field has been glacially slow, then this is more than offset by the momentum that has been built up and continues to build. Over the coming years, the AMR market is expected to grow by as much as 50 percent each year. In many applications, such as automatic meter reading (AMR), the customer base is not only potentially vast, once a wireless telemetry application has been installed, customers are essentially captive and churn is negligible.

There are probably as many segmentations of the wireless telemetry market as there are industry analysts. For the purposes of this article, we will therefore focus on the applications for which Mobitex has been proven to be a cost-effective technology or for which the potential for Mobitex is considered significant. To date, the most common wireless telemetry applications for Mobitex have been AMR applications for electricity, heating and water companies and many other types of vending machines (e.g., beverage machines, parking meters and ATMs). Although there are fewer applications for asset tracking, security and SCADA (supervisory control and data acquisition), these are application areas in which Mobitex has significant potential.

**WIDE-SCALE DEPLOYMENT**

Meter reading is an ideal telemetry application. Without remote data collection, a water, electricity or heating supplier must send out a person to read each meter to collect billing information meaning that readings can only be taken infrequently.

Telemetry solves this problem by employing what is essentially a wireless LAN (local area network) using unlicensed radio spectrum and a data concentrator. Meter readings are transmitted wirelessly to the concentrator and forwarded to a central processing system. The final link to the central system may be a fixed connection, such as a telephone line, but increasingly wireless WANs (wide-area network) are being used for this connection, as well.

Mobitex is particularly suitable for this application because it is a highly reliable packet-switched network for which users pay only for the volume of data transmitted, not connection time, and because it guarantees error-free delivery of data. While these are significant advantages for Mobitex operators and solution providers, wireless telemetry has some disadvantages that must be taken into consideration. AMR applications, which are the most common in terms of installed units, generate little traffic, with revenues typically on the order of USD 10 to 20 per month per meter and expected to decline further. On the other hand, traffic can often be handled at night when traffic would otherwise be light.

The cost of communication equipment for a wireless telemetry application also remains high, meaning that many applications are difficult to cost-justify. Although equipment costs are coming down rapidly, it remains imperative to seek applications that deliver added value and involve not just monitoring, but also control. To be cost-justified, a wireless telemetry application also needs to be deployed over a very large customer base. This is exactly what Korean Mobitex operator Intec Telecom intends to do with its security and surveillance service by leveraging Samsung’s huge customer base.

"Once a wireless telemetry application has been installed, churn is negligible."
"Profitable wireless telemetry applications must add value."

CONTROL ADDS VALUE

In many cases, savings from a telemetry application can be considerable, meaning that an AMR application is often cost-justified from the utility's perspective. However, profitable wireless telemetry applications from the perspective of the network operator or solution provider must add value that will result in higher revenues. A fruitful approach is to take advantage of two-way communications to include control functions.

Since utility meters typically only need to be read, not controlled, AMR applications might seem to offer little opportunity in this regard. Distribution networks for water, heat, gas and electricity, however, require constant monitoring and supervision. Continuous monitoring of the network allows Dutch utility Naam, for example, to adjust power production precisely, thus conserving precious resources and maximizing operational efficiency. SCADA (Supervisory Control and Data Acquisition) applications used for monitoring, analyzing and/or controlling systems and processes also incorporate this control dimension.

CREATING A NEW VALUE CHAIN

In addition to the applications featured in this section, there are a large number of applications in other areas in which wireless telemetry can be leveraged to create a new value chain. Remote monitoring and control of vending machines is one example of a type of application that has been featured often in Mobile Data Magazine. Although wireless telemetry can be used with almost any type of vending machine, Mobitex is most commonly used in applications for parking meters where its low communication costs and two-way data capability are important benefits. Not only is monitoring of parking meters inexpensive and efficient, tourist and traffic information can be sent to the parking meters and parking rates can be adjusted remotely. One such application in Rotterdam is featured in the Business News section of this issue.

Asset tracking is another important wireless telemetry application. Perhaps the most well-known example of a Mobitex application for asset tracking is the system used by FedEx in the US and other countries, which uses Mobitex at strategic points along the delivery chain to track the progress of a package from the sender to its destination. As noted in our Business News section, Mobitex is also helping City Link in the UK to gain the upper hand in deadline delivery. Although wireless telemetry is just one component in parcel tracking systems, it has been a key factor in revolutionizing the industry.

Korean Mobitex operator Intex Telecom is currently planning the deployment of a system that will provide traffic information to motorists. Mobitex and GPS (Global Positioning System) will be used to gather traffic information from selected vehicles, while the operator’s paging network will be used to broadcast this information to all motorists. This application, which is being developed with such partners as Hyundai, will undoubtedly be featured in a forum issue of Mobile Data Magazine. A somewhat similar Mobitex application is already being used in Singapore, where local authorities have realized that deploying intelligent traffic systems can be cheaper than building new roads.

VAST POTENTIAL

Innovative and imaginative applications of wireless telemetry are possible today. Whether it is a more mundane application like automatic meter reading or a sophisticated system for monitoring and control of intelligent homes, Mobitex has a key role to play in the growing wireless telemetry market. In many applications areas, Mobitex is already the leading technology and has pioneered new applications for wireless telemetry. Although it may be both confusing and complex, wireless telemetry is a market with vast opportunities.

Substantial loss of water through leakage and general waste has become a high profile environmental issue. Not only does this result in a significant loss of revenue. It has become increasingly difficult to deliver an acceptable level of service. Advanced Technology RAMAR (ATR), a company that has long delivered telecom applications based on Mobitex, has a solution through which companies can implement a scheme to enable the remote monitoring of their water delivery system.

The ATR system will isolate both leakage and system tampering at the source and alert the water company of the situation, allowing them to take immediate action. Because data from meters can be obtained on-demand, constant and accurate consumption data will be available to facilitate regular, detailed customer bills. The system will also give the ability to compile load profiles and demand forecasts.

ATR’s system works by installing a water meter with an electronic wireless encoder (EWE) fitted. The TranceiveIT transmits data from the meter to a locally positioned concentrator device (ConcentratIT). Each ConcentratIT can receive and transmit data from hundreds of meters. The ConcentratIT in turn transmits the data via a Mobitex network to the water company’s host computer at head office.

The ATR system features a scalable architecture that allows it to be expanded to serve a large customer base, as well as powerful diagnostic tools for system management. Meter data can be accessed directly or received via email.

Making the most of water

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The ATR system features a scalable architecture that allows it to be expanded to serve a large customer base, as well as powerful diagnostic tools for system management. Meter data can be accessed directly or received via email. ATR supports metering equipment from all major manufacturers, meaning that the system is easily installed and that expensive modifications to existing equipment are unnecessary.

“ATR’s automatic meter reading portfolio is among the broadest in the industry and offers a sophisticated and highly efficient system for water, gas and electric companies. As an Ericsson business partner, ATR is able to offer Mobitex for wireless wide-area communications. This successful water metering concept has already been tested in a pilot project and will soon be implemented on a private Mobitex network for a new customer. This concept will undoubtedly open new Mobitex markets,” says Tomas Lundkvist, marketing and sales director at Mobitex, Ericsson.
MAKING THE MOST OF WATER

Substantial loss of water through leakage and general waste has become a high profile environmental issue. Not only does this result in a significant loss of revenue. It has become increasingly difficult to deliver an acceptable level of service.

Advanced Technology RAMAR (ATR), a company that has long delivered telemetry applications based on Mobitex, has a solution through which companies can implement a scheme to enable the remote monitoring of their water delivery system.

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Korean Mobitex operator Intec Telecom recently won a very major order from S1, a Samsung subsidiary and Korea’s largest total security provider. With more than 250,000 customers and a market share of about 70 percent, S1 offers everything from crime and fire prevention to information and communication services. As of October, Mobitex will become an important component in these services.
S1 customers, which include both companies with industrial and office premises and private homes, typically sign a three-year contract for security services, which include remote surveillance and control. Thus far, S1 has relied on fixed lines and the PSTN for communications. Now, however, Molsin will become the new standard.

The leased line provided by Korea Telecom (KT) for the $1 security service costs about USD 10 per month. To maintain its annual growth rate of 18 percent, S1 knew that this cost needed to be reduced. At the same time, KT was phasing out its slower leased lines, which it wanted to replace with an ADSL connection costing a minimum of USD 15 per month. Intec Telecom was quick to realize that this was a major opportunity for Molsin. “By replacing leased lines with Molsin, we knew that we could reduce the monthly communications fee from USD 10 to about USD 2, while leveraging S1’s huge customer base. This was an opportunity that we could not afford to miss,” says Intec Telecom CEO Won Baek.

**FLAWLESS PERFORMANCE**

S1 naturally wanted to evaluate several alternatives, including Molsin and CDMA2000 1xEV-DO. There was also the minor problem that Intec did not have a suitable device for the S1 application. There were not the kind of obstacles that were going to stop the ambitious Korean operator, however.

“Our parent company CNI (Communication Network Interface) developed the LinkBox for S1’s security services in record time,” says Won Baek proudly. Although simple in principle, the LinkBox contains a wireless and two wireline modems, a processor and a variety of interfaces for connecting to external equipment.

At the same time, S1 was planning field tests, which for Molsin included 60 test installations. During the tests, Molsin performed flawlessly, providing 100-percent reliable and error-free data transmission. This reliability, in combination with native support for true push functionality, were major factors in S1’s selection of Molsin over CDMA.

**FAST RAMP-UP**

The LinkBox is connected to a master control unit within a security system. This unit monitors the detectors at a given site, forwards alarm signals and transmits monitoring signals to and from the central operation center. Molsin is the primary communications channel, while the wireline modems is used only as a back-up.

Following the successful field test, S1 placed an order for 30,000 units, delivery of which is scheduled to begin in mid-Octuber and be completed by the end of the year. Over the next 12 months, S1 expects to equip as many as 100,000 of its customers with CNI’s LinkBox. Although some production resources had to be re-allocated, CNI was able to ramp up production quickly and expects to be able to meet this ambitious delivery schedule.

“The S1 security and surveillance services are an ideal application for us at this time, since most of the traffic will be generated at night when network loads are low,” reveals Won Baek, adding that the operator expects to derive additional revenue by taking advantage of two-way data communications. For residential customers, this will include various remote control functions, such as regulating heating, opening or locking doors and activating household appliances.

“Molsin also offers important benefits that significantly enhance customer satisfaction,” notes Won Baek. “In addition to 100-percent reliable data communications, Molsin is naturally a wireless system, meaning that there are no wires that thieves can cut. For this application, we can also take advantage of the closed user group (CUG) feature in Molsin to guarantee that unauthorized persons are not able to access the company’s system.”

**RAPID ROI**

This major order from Korea’s largest security company represents a huge vote of confidence in Molsin. S1 is obviously confident that Intec Telecom’s Molsin network and CNI’s LinkBox will significantly improve service for end customers. Equally important, however, is that S1’s own calculations reveal that the reduction of communication costs from USD 10 to USD 2 per month will allow the company to reach the break-even point with respect to hardware costs during the second year of operation, thus making the company more competitive and increasing profitability.

“We are very pleased to be working with S1 and to be able to contribute to helping them achieve their goal of being the number one company in the digital security industry,” concludes Won Baek.
ELECTRICITY SUPPLY
EXACTLY REGULATED

The Energy Systems and Services (ESS) division of Nuon, one of the Netherlands’ largest energy and water companies, recently installed a wireless telemetry solution in its nationwide electricity network. Some 500 co-generation plants distributed throughout the country are now connected to the Mobitex network operated by RAM Mobile Data. For a relatively modest investment, the utility company is now able to regulate energy production exactly. This not only makes energy management more efficient. For Nuon, which is a green energy company that prioritizes renewable energy sources, the new application is an important part of its profile.

The 500 WKK installations control the operation of plants driven by natural gas or biogas that can be started automatically and remotely to produce heating, cooling, steam or electricity. Electricity not consumed locally is returned to the network. Some 45 percent of all WKK installations are at this type of plant, while the remainder are installed at other locations, such as hospitals and swimming pools. Plants are naturally equipped with flue-gas filters to reduce the emission of carbon dioxide and other greenhouse gases.

Paul Marquering from Nuon’s ESS business unit is responsible for the project. He explains why it is so important to know exactly how much electricity is delivered. “We always have to work with our colleagues in other business units and take their requirements into consideration. The other units trade in energy and naturally want to have an optimal grasp of total electricity production so that they know how much power they need to buy. To provide them with this information, we produce forecasts every 15 minutes,” says Marquering.

In addition, the wireless telemetry application provides Nuon with a tool to determine if forecast amounts need to be raised or lowered. Because Nuon is able to quickly increase or decrease production, operations personnel can respond appropriately to avoid surplus production of electricity.

EFFICIENT POWER MANAGEMENT

Continuous monitoring is essential to achieve these benefits. Prior to the introduction of the wireless telemetry application, plant availability and maximum output power could only be determined on a daily basis. There was also little uniformity in this information. Today the WKK application makes information available instantly, thus increasing the efficiency of power management. The wireless telemetry application also facilitates settlements, since changes in power output can be metered up until five minutes prior to final settlement.

Paul Marquering and his project team evaluated several options for data communication. “We quickly realized the benefits of true wireless data communication over the Mobitex network operated by RAM Mobile Data. A fixed connection was too expensive. GSM, on the other hand, was not sufficiently reliable, while GPRS was not available. RAM Mobile Data was able to guarantee reliable data transmission,” says Marquering.

Nuon worked with Romesq, a Dutch supplier of telemetry and monitoring applications for utility companies. Romesq provided the hardware and software and worked closely with Paul Marquering and his project members to develop the WKK application.

“This was crucial for us, since we do not have our own IT department,” notes Marquering. “We had to ensure that the WKK units in the power plants worked correctly against Nuon’s central systems and that remote monitoring and control could take place without operator intervention. Romesq delivered a system that gives us tremendous flexibility.”
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“These tiny devices provide a powerful platform for third-party applications.”

The TWM3 wireless handheld from CNI (Communication Network Interface) is one of the most interesting of a new generation of Mobitex devices.
originally developed for Intec Telecom’s 900 MHz Mobitex network in Korea, the TWM3 is now available in 800 MHz and 400 MHz versions, meaning that it can be used in all Mobitex markets around the world. UK Mobitex operator Transcomm and Hong-Kong operator TDL are the latest customers to begin offering the TWM3 to customers and will promote it heavily in their service launches. The TWM3 has been featured previously in Mobile Data Magazine (no. 2, 2001), which contained a detailed article on the technical features of the device. This article will instead focus on the TWM3 as a platform for application developers and the tools available for creating applications. The TWM3 is an excellent application platform, not least because it includes support for WAP (Wireless Application Protocol) and POP3 e-mail and is supported by a software development kit (SDK) produced by CNI.

The TWM3 SDK includes all libraries and files required for building an application, a development environment that includes a simulator for testing applications and more than 800 pages of documentation divided into an installation guide, a programming guide and a reference manual. Applications are compiled for the testing in the development environment using Microsoft Visual C++, while an ARM compiler and linker are used to produce the debugged code that will be loaded into the TWM3.

**EXTENSIVE APIS**

“The TWM3 SDK provides a rich set of APIs (Application Programming Interfaces),” notes Niclas Cahlin, manager for end-to-end solutions at Mobitex, Ericsson. In addition to the APIs for Mobitex and serial communication, there are Windows, Control and Graphics interfaces for creating windows and populating them with buttons and other controls and for drawing on the screen, which is a 160 x 240 display with four levels of gray. There is also an API for the flash memory file system, as well as APIs for task and event management.

The programming model for the TWM3 will be familiar to Windows programmers. A TWM3 application creates windows, registers tasks and events and enters a message loop in which it waits for user input or other events, such as data being received over the Mobitex network. Although CNI-specific identifiers are used, most of the messages are very similar to those Windows equivalents. Although the TWM3 is a very small device, it includes a 32-bit RISC processor, up to 8 MB of memory (RAM plus flash ROM) and a multitasking real-time operating system (RTOS).

The TWM3 has a default screen in which the first six positions are reserved for built-in PIM (personal information manager) functions, while the others are available for displaying the icons of other applications. Once the user has selected an application by tapping on an icon, the application can take control of the entire display and receive all user input.

CNI has developed a number of applications that Transcomm will include in the devices sold in the UK. Communications applications include a POP3 e-mail client, a WML (Wireless Markup Language) micro-browser and an application called PushBox for WAP push pages. PIM applications include address, schedule, to-do and date book applications. There are also games, such as Reversi, Puzzle and Block, and a musical composer for creating new alert melodies plus device configuration tools.

**THIN-CLIENT APPLICATIONS**

“We are targeting the TWM3 handheld on the Transcomm network at both our existing customer channels and new ones, including SME (small-to-medium enterprise) business users and field workers and fleets. The primary application that we have identified is POP3 e-mail access, with the WML micro-browser a close second,” reveals Jason Railton, software development engineer at Transcomm. As a network service provider, Transcomm does not intend to develop applications on its own, but is instead working closely with its business partners and customers to promote application development. Several customers are developing “thick client” applications that will run on the TWM3, but no applications based on the TWM3 SDK are available yet.

These tiny devices provide a powerful platform for third-party applications.
“We have come up with a ‘thin-client’ strategy that drastically reduces development costs for our customers,” says Jason Railton. “The TWM3 SDK requires two compilers, one to compile the application for the emulator and another to produce the final code. If the developer does not have experience of mobile devices, then it can take a long time to learn how to get the most out of the SDK. As an alternative, we therefore investigated provisioning applications through the WML micro-browser. We found that interactive WML pages could be produced with very little effort and no software licensing costs.

The tools required for producing micro-browser-based applications are an Apache HTTP server, the page scripting language PHP and the MySQL database, all of which are open-source applications that can be downloaded with no licensing fees. Most developers will undoubtedly run these tools under Windows, but open-source versions are available for Linux, Mac OS and other popular operating systems.

RAPID APPLICATION DEVELOPMENT

Using these tools, Jason Railton developed a sample application that demonstrates how a control center can use the TWM3 to pass work on to field service personnel. The application allows a new job to be entered on a web page and includes buttons to send the job and to update the job list. When the mobile worker has received the job order and completed the form, it is returned so that the control center can view the response.

“The entire application was developed by one person within two weeks with no cost to the company for external training or software licenses. Clearly this adds value to the micro-browser over and above the day-to-day browsing of web sites. The larger screen size compared with a mobile phone improves the appearance of WML pages, and there is always the cross-platform compatibility gained by using HTML and WML standards,” notes Railton.

As developers become more familiar with the new generation of wireless handhelds, new applications can only increase their popularity. Already extremely useful straight out of the box as PDAs and for wireless e-mail and messaging, these tiny devices provide a very powerful platform for applications that are only limited by the imagination.

The TWM3 supports two application groups: built-in (APG0) and third-party (APG1) applications with the following run-time environment: Windows Toolkit (WT), Message Transaction Manager (MTM), Database Manager (DB), Graphics System (GS), Event Manager (EM), Task Manager (TM) and File System (FS).
The Palm i705 for 900 MHz Mobitex networks offers two alternatives for developers that are somewhat similar to the alternatives for the TWM3 described in the main article. One approach is to develop a native application for Palm OS using the Palm OS 5 SDK. The other alternative is to develop a web clipping application that accesses special web sites.

Developing a native application for the Palm OS is a relatively complex undertaking and requires in-depth knowledge of programming and the Palm OS. The Palm OS 5 SDK, however, may be downloaded free-of-charge from the Palm website after accepting a license agreement. As is the case for most handheld devices, the Palm OS SDK includes an emulator in which an application can be tested and debugged before the final code for the handheld is produced. The Palm OS SDK uses a single C compiler (Code Warrior) for producing both versions.

Web clipping offers a faster method for developing applications with more limited functionality. Web clipping applications are created by compiling standard HTML pages using Palm’s Clipping Application Builder tool, which generates a PQA file that is installed on the Palm device. When the user invokes the clipping application, a Web Clipping Viewer application opens a website and renders its contents. Behind the scenes, the clipping application is communicating with a Palm.net proxy server that handles Internet communication.

RIM currently offers two families of wireless handheld devices. One family consists of RIM 950 and RIM 957 handhelds for Mobitex (and their counterparts the RIM 850 and RIM 857 for DataTAC), while the other family is the BlackBerry 5800 series of wireless handhelds for GPRS networks. There is a different development environment and a separate SDK for each family. Both SDKs can be downloaded from the Blackberry website after accepting a license agreement.

The BlackBerry SDK version 2.1 for Mobitex devices (RIM 950 and 957) contains a full PC-based emulation environment, all the APIs and libraries required to build an application and extensive documentation. Microsoft Visual Studio 6.0 is required for building applications, but because the RIM devices employ an Intel 386 processor, the same Visual C++ compiler can be used to produce applications for the emulator, as well as the handheld device.

The BlackBerry 5800 handhelds for GPRS introduce a completely new programming paradigm based on the Java 2 Micro Edition (J2ME). The runtime environment for the application includes a special version of the Java Virtual Machine (JVM) called the KVM and supports both CLDC (Connected Limited Device Configuration) and MIDP (Mobile Information Device Profile) options.

The Good G100 is a new wireless handheld being introduced in the North American market this autumn. Developer tools and support for third-party applications are expected to be released shortly, but no details are available at this time.
The modems inside many of the Mobitex FDAs that are available are all based on the CMX909B modem chip from CML Microcircuits. The CMX909B, which is CML’s latest GMSK packet data modem, contains all of the baseband signal processing and Medium Access Control (MAC) protocol functions required for a high performance GMSK wireless packet data modem.

Not content with this success, CML is exploring the next phase of development to ensure not only that CML remains at the forefront of Mobitex modem development, but that its customers are able to achieve the smallest size, lowest cost and best performance in wireless modems for Mobitex.

CML has launched the EV9000 Evaluation Kit consisting of hardware and software intended to help designers experiment, develop and evaluate design based upon the CMX909B. New releases of the software, firmware and manuals, as well as support for other devices, are available via CML’s web site.

CML Microsystems Plc has undergone a name change within its holding companies. The US operation will be known as CML Microcircuits USA (Inc.) the Singapore office as CML Microcircuits (Singapore) Pte Ltd and the UK office as CML Microcircuits (UK) Ltd at England.
Wireless email and messaging have driven the market in the US and loaded Cingular’s Mobitex network with nearly one million subscribers. Working on the premise that no technology is so good that it cannot be made better, Good Technology has developed new software and a new wireless handheld that are sure to increase the popularity of Mobitex and drive growth further.

GoodLink™ is a wireless corporate messaging system that provides corporate customers with an end-to-end system for continuous synchronization, meaning that information on the handheld is always the same as what is on the desktop. This is a stand-alone system for wirelessly connecting mobile workers with valuable enterprise data and e-mail. With GoodLink, the device can reach customers, and it takes about 10 seconds to download a one-page attachment containing a Microsoft Word, Excel or PowerPoint document, for example, a Microsoft Word, Excel or PowerPoint document, for example, or a corporate email and accessing data. To further enable corporate customers to extend valuable data sources wirelessly to mobile users, GoodInfo™ wireless information system gives users access to web-enabled applications from SAP or Siebel, as well as corporate applications, intranets and public websites — even when wireless coverage is intermittent. GoodInfo is optimized for delivering data over today’s wireless networks; it uses a query and response delivery model to make information available both offline and online.

“We interviewed many CIOs who told us they wanted one vendor to provide an end-to-end, wirelessly synchronized connection to corporate information that works on a variety of devices,” said Danny Shader, chief executive officer of Good Technology, Inc., adding that GoodLink and GoodInfo solutions improve on other wireless corporate services in several areas, including zero desktop install, wireless two-way synchronization, attachment viewing and an improved user interface.

**PURPOSE-BUILT FOR E-MAIL AND DATA ACCESS**

Good states that its wireless service will work on a variety of devices. To fully leverage the power of this innovative software and provide an end-to-end solution, Good has also developed the Good G100 handheld, which will be available in October. This is a powerful, compact and sophisticated handheld that pioneers a new category of synchronized messaging devices — continuously synchronized wireless handhelds with large screens that are purpose-built for composing and viewing large amounts of email and accessing data.

Both the GoodLink and GoodInfo software and the Good G100 wireless handheld are being made available in Cingular Xpress Mail GoodLink Edition, which will be Cingular’s premier wireless corporate e-mail application for enterprises. Deployed behind the firewall, Cingular Xpress Mail GoodLink Edition is an end-to-end wireless system that gives employees of companies the ability to securely access their Microsoft Exchange corporate e-mail, calendar, contacts, notes and records, as well as attachments.

“Cingular Xpress Mail GoodLink Edition epitomizes simplicity,” says Virginia L. Vann, chief marketing officer for Cingular Wireless. “It is an end-to-end system that simplifies the experience both for the IT department when installing the service and for the end-user when managing his or her e-mail and other desktop functions when away from the office.”

Good has already signed up a number of customers for its new service. “Silicon Valley Bank strives to provide the best possible customer service to clients so we deployed GoodLink to our managers to improve customer response time. For these users, instant access to email is a necessity, so they love the completely synchronized wireless connection to corporate email and information — especially the attachments — with no trailing required,” said Rebekah Westlake, information technology manager at Silicon Valley Bank.

The models inside many of the Mobitex PDAs that are available are all based on the CMX909B modem chip from CML Microsystems. The CMX909B, which is CML’s latest GMSK packet data modem, contains all of the hardware and software, firmware and manuals, as well as support for other devices, are available via CML’s web site. CML Microsystems Pte. Ltd. has undergone a name change within its holding companies. The US operation will be known as CML Microcircuits USA (Inc.) the Singapore office as CML Microcircuits (Singapore) Pte Ltd and the UK office as CML Microcircuits (UK) Ltd in England.

When they see a flashing blue light on a motorcycle approaching rapidly from behind, Stockholm motorists may be surprised to find not a police officer, but a doctor flashing past. Equipped with a wireless application running on Swedish Mobitex operator Torex’s network, the doctor on his way to the scene of an accident already has a head start on the ambulance and can easily weave through heavy traffic.

“I receive the first aid via the apheresis in my helmet. At the same time, a red light starts flashing here until I accept the assignment,” says Dr. Anders Lindberg, pointing to the wireless application running on his bike. Lindberg, who has been riding motor-cycles for many years received emergency driving instruction from Stockholm’s motorcycle police.

“Mobitex is highly suitable for emergency services because of its high reliability and robustness,” says Michael Palmblad, business area manager at Torex. “The tests here in Stockholm are an excellent example of how mobile data services can help to save both resources and time for ambulance services. Emergency doctors on motorcycles should be an attractive alternative in many large cities,” concludes Michael Palmblad.
ON CHEMICAL SAFETY

Keeping an eye on chemicals

Chemical, always an important concern when hazardous chemicals are being handled, has been significantly enhanced in an industrial area on Jurong Island in Singapore. The requirement comes after September 11th. With the new system, alerts are forwarded instantly to all parties, allowing them to take action quickly and appropriately.

Sixteen chemical industry companies are participants in the project. All of these companies produce or handle chemicals on Jurong Island, which Singapore is transforming into a world-class hub for the chemicals industry. For these customers, local Mobitex operator ST Mobile Data created an Alert Messaging System that links all companies together wirelessly. This software allows personnel at each company to enter an alert that is instantly transmitted to all participants. The radio modem complies a range of devices using other communication technologies. The ProGenie device is specifically marketed into the same markets as Mobitex where the product meets the working requirements of vehicle based and handheld users in one fully integrated package.

The terminal has a widescreen color VGA (852 x 480) display and runs Windows CE (version 3.0). Data storage is available with 32MB RAM as standard and expansion with compact flash capable of adding an additional 2GB. The unit is powered by a high capacity, rechargeable Lithium Ion battery, capable of operating for a full eight-hour workday. Integrated options for the range comprise bar code scanning (including the latest PDF417 2D bar code) and GPS reception.

A powerful vehicle cradle is supplied for changing the terminal and connection to multiple external devices, including printers and other equipment. The cradle can also be switched to an external antenna and GPS receiver when the terminal is used in a vehicle to comply with European CE regulations. The cradle has been specifically designed to be mounted and used in a wide range of vehicles.

Additionally, the ProGenie 2000 batch terminal is currently being used successfully with externally connected Mobitex modems in two UK projects. The cradle has two serial ports to allow connection of the modem and other devices. The first application is used for field service and cash collection in the gaming industry. The second, which is based on a PG-2010 with an integrated GPS receiver, is being used at London’s Heathrow airport for managing a shuttle bus fleet.

The radio

The radio is connected to the Power Pack by a medium size cable and uses a small Power Pack.

The Power Pack

The Power Pack is connected to the vehicle power supply by a medium size cable.

The cradle

The cradle is a mobile cradle designed for hand held devices and can be used with a variety of accessories.

The vehicle

The vehicle is a mobile vehicle designed for hand held devices and can be used with a variety of accessories.

The mobile terminal

The mobile terminal is a mobile terminal designed for mobile vehicles and can be used with a variety of accessories.

The vehicle position

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Discrete Wireless, a 2-year old company that is a wireless application service provider (WASP) based in Atlanta, Georgia in the US, received a Cingular Best Solution award earlier this year at WAVE 2002 for its Marcus™ wireless tracking solution. Discrete won the award for the originality, creativity, usability and robustness of its application in the field force automation industry.

Discrete’s low cost Internet-based solution enables small and medium-size organizations to quickly and easily deploy an effective fleet management application. An average customer has 10 users but the application can also be scaled to several hundred users. With the Marcus wireless tracking system, fleet managers have the map information and report that they need to increase driver productivity, accurately report sales calls and monitor a wide range of vehicle and driver performance parameters.

Discrete uses GPS (Global Positioning System) satellites to provide a live vehicle tracking service. A device in the vehicle that includes a radio modem collects vehicle operational data and transmits it over the Mobitex network to the Discrete Wireless Gateway. The web-based Marcus application uses mapping software and GIS data to provide products and technologies for the consumer and professional markets. Discrete Wireless will be adding satellite service worldwide next year. With Discrete Wireless users are able to view vehicle position and status input data on the Internet and produce reports via a standard web browser.

The complex task of tracking the activity of a fleet of vehicles and monitoring driver behavior is critical to customer service, security and efficiency.

Marcus is not only useful in field force automation. Government authorities in Atlanta and the Southeastern United States have begun tracking school buses with Discrete Wireless, permitting such tasks as finding buses in any location, logging arrivals at given destinations, and generating alerts if a bus deviates from its route. Marcus thus not only increases efficiency of school bus services, it provides an extra margin of security for children traveling to and from school.

Discrete Wireless recently became an associate member of the Mobitex Operators Association (MOA) and will be participating in the upcoming MOA meeting in Seoul, Korea as both a user and a developer.

For more information on Discrete Wireless, please call 1-866-327-0664 or visit www.discretewireless.com.

**KEEPING AN EYE ON CHEMICAL SAFETY**

**FIND THE FLEET ANYWHERE**

Discrete Wireless will provide a live vehicle tracking service. The Marcus™ solution has been specifically designed to be mounted and used in a wide range of vehicle types.

**PROGENIE 5000 AT HAND AND FULLY CONNECTED**

The ProGenie range of mobile computers are designed to meet the exacting needs of commercial and business users. The ProGenie range is now approved on the UK Mobitex network, and an order for 175 units has already been received for the first deployment.

The ProGenie 5000 uses an integrated CNI modem and complements a range of devices using other communication technologies. The ProGenie device is specifically marketed into the same markets as Mobitex where the product meets the working requirements of vehicle based and handheld users in one fully integrated package.

The terminal has a widescreen color VGA (852 x 480) display and runs Windows CE (version 5.0). Data storage is available with 32MB RAM as standard and expansion with compact flash capable of adding an additional 2GB. The unit is powered by a high capacity, rechargeable Lithium Ion battery, capable of operating for a full eight-hour workday. Integrated options for the range comprise bar code scanning (including the latest PDF417 2D bar code) and GPS reception.

A powerful vehicle cradle is supplied for changing the terminal and connection to multiple external devices, including printers and other equipment. The cradle can also be switched to an external antenna and GPS receiver when the terminal is used in a vehicle to comply with European CE regulations. The cradle has also been specifically designed to be mounted and used in a wide range of vehicles.

Additionally, the ProGenie 2000 laptop terminal is currently being used successfully with externally connected Mobitex modems in two UK projects. The cradle has two serial ports to allow connection of the modem and other devices. The first application is used for field service and cash collection in the gaming industry. The second, which is based on a PC-2010 with an integrated GPS receiver, is being used at London’s Heathrow airport for managing a shuttle bus fleet.

The ProGenie manufacturer is also considering developing versions of the ProGenie 5000 to support Mobitex in markets outside of the UK via its network of international distributors. Any interested parties should contact Colin Pole (colin.pole@progenie.co.uk). Further information can be found on the ProGenie at www.progenie.co.uk.

**MOBILE MESSENGER ARRIVES**

Korean manufacturer CNI (Communication Network Interactive) recently introduced the TWKM Mobile Messenger, which is designed to work with Mobitex operator Intec Telecom’s new Mobitalk messaging service.

Measuring just 88 x 66 x 195 mm, this tiny yet powerful device is actually slightly smaller than the familiar RIM 950 handheld yet offers a QUERTY keyboard plus a thumbwheel and home key for access to messaging functions. In addition to its messaging functions, the TWKM supports address book synchroniza-

nization with Microsoft Outlook, data synchronization with a PC, downloadable icons and melodies, several games and a calculator.

The TWKM’s messaging functions are exceptionally powerful. Up to three POP3 email accounts are supported with true push functionality fully implemented in the Mobitalk messaging service to ensure that messages are always received instantly. The TWKM also supports interactive messaging, multiple chat sessions and wireless chat sessions for the Mobitalk user community. The Mobitalk service offered by Intec Telecom also includes gateways for email, SMS and fax messages.

The TWKM will initially be available in 900 MHz version for Korea. Because it is based on CNI’s TWKS OEM radio modem for Mobitex, 400 MHz and 800 MHz versions for other Mobitex markets can be expected shortly.

“The TWKM is a new product that will give us the possibility to reach new target groups, thereby further accelerating Mobitex growth,” says Iris Ödman, after-sales director for Mobitex at Ericsson.

Simultaneously with the announcement of TWKM, CNI also announced the TWKS Plus, an enhanced version of the wireless PDA that is already available in 400 MHz, 800 MHz and 900 MHz versions. The new TWKS Plus is identical in all respects to the TWKS but features enhanced software and a larger capacity of 8 MB Flash and 8 MB RAM memory.
APPLICATION STOREFRONT
FOR WIRELESS SHOPPERS

Building on the success of its Application Developer Program, which was initially designed for Mobitex and now has more than 6,000 members, Cingular Wireless has launched the Application Storefront. This initiative provides a venue for developers both large and small to market their applications to millions of Cingular Wireless subscribers. Mobile Data Magazine talked to Roy Tarantino, Director, Application Development Environment, to find out more about this innovative approach to marketing wireless data.

What is the applications storefront and how was it conceived?
Cingular’s Applications Storefront is an extension of our wireless developers portal that provides a means for developers to sell applications to the Cingular subscriber base.

The original Cingular Application Developer Program was established early in Cingular Interactive’s history to support wireless data developers working in the Mobitex environment. The current program and portal evolved from the original to support not only Mobitex developers, but also those developing wireless applications for all of Cingular’s technologies, including WAP, messaging and wireless Java.

What benefits does the applications storefront have for developers?
On the Developers Portal, developers can find the latest documentation on the various network interfaces, third-party Software Development Kits (SDKs), white papers, and FAQs. Application code samples, as well as developer discounts on airtime and devices are available, and the portal also provides support via community discussion forums moderated by Cingular engineering and outside experts. In addition, there is also a trouble ticketing system.

Application developers can submit applications from the portal for inclusion in one of Cingular’s Application Storefronts. The storefronts are well placed on the top deck consumer and business portals and are integrated with the Cingular billing system so that customer purchases are charged to their phone bill. The Cingular Application Developer portal features an extranet that developers can log into and track the progress and sales results of their applications.

“We have over 19,000 visitors per day on the storefronts. Purchases are beginning to ramp up.”
How is interest among developers? Interest is very high. We currently have nearly 6000 members, with several hundred new members being added each month.

How many applications are available through the Application Storefronts? There are close to 2000 applications available from the Cingular Application Storefronts.

How has the response been among customers? Interest has been high. We get over 19,000 visits per day on the storefronts. Purchases are beginning to ramp up.

What are the most popular applications? The most popular applications are games, branded portals (MSN, Yahoo, etc.), news and weather services.

What is the application mix in terms of technologies? Because Java phones are just being launched, there are currently no Java applications on the storefronts. Mobitex applications represent a sizable proportion of the mix, but messaging and WAP-based applications currently dominate, since there are many more mobile phones that Mobitex users on Cingular's Wireless networks.

Mobitex applications are also complete end-to-end solutions and applications are thus limited to those that use messaging and email interfaces on RIM handhelds. With the launch of new devices for Mobitex and Java phones, however, the mix will change.

Does the Applications Storefront target any particular customer segments? No, the intention is to establish an ecosytem. Developers are free to submit any type of application (except for obscene material). The marketplace will determine which applications are valued by consumers. That will spur the growth of creative, innovative and useful wireless applications.

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What are the requirements must developers meet to have their application included on an Application Storefront? There are very well defined requirements that applications must meet. The application must be stable and reliable. It must run well on the devices and phones that Cingular sells. There are also subjective criteria, i.e. will customers feel good about spending money on the application? Each application is given a rating from 1 to 5 stars before it is listed on the storefront.

Are developers typically individuals and small companies or do larger companies also find Application Storefront useful? There are really no typical submissions. There is a mix ranging from one-man shops to large companies submitting applications.

What is the revenue-sharing model for applications and application developers? Developers receive 70 percent of each sale, while Cingular receives 30 percent to cover costs for administering the storefronts, testing applications and customer billing.

What is the application development process? Application development is encouraged by providing incentive to developers to produce applications that deliver value to the consumer. A few development tips include:

- Open up MMS-SMS access to developers.
- Provide a means for developers to sell applications.
- Increase the use of Instant Messaging services.
- Increase support for developers to monetize their efforts.
- Offer discounts on airtime and devices.

What is the exclusivity of any kind? No, application developers are free to sell their applications via other channels. There is no exclusivity of any kind.

Are applications a model for developers targeting phone-based devices? As we see the launch of Java phones, there may be a shift to intelligent client-side applications that use a packet interface. Such client-based applications have a broader appeal than Mobitex applications, and may be more closely resemble the original client/server model as opposed to the browser model that WAP uses. However, when phones provide a sophisticated, standards-based environment, the Mobitex client/server model becomes very relevant to developers.

What are the plans for the future? With our upcoming launch of Cingular's WAP, Java phones, and Mobitex development, we see a very exciting future for developers. With more and more phones running Java, there will be a shift to intelligent client-side applications that use a packet interface. Such client-based applications can have a broader appeal than Mobitex applications, and may even more closely resemble the original client/server model as opposed to the browser model that WAP uses. However, when phones provide a sophisticated, standards-based environment, the Mobitex client/server model becomes very relevant to developers.
Wireless devices are usually pretty reliable. What I found out recently, however, is that they may not work so well in boats.

To start at the beginning, it was one of those rare evenings when friends get together to relax and the weather gods seemed to have blessed them. The night air was warm with a gentle breeze that seemed to wash away all worldly concerns. We were at an amusement park where imaginations were allowed to run free and fantasies suddenly became real.

Water was to be the theme for the evening. Although the bays and islands were artificial, we seemed to be living in a tropical paradise in which all kinds of adventures were possible. Naturally, many of the attractions featured boat rides.

Perhaps communicating with the outside world should not be a concern at times like these, but the wireless revolution had apparently transformed paradise, too. Jaded as I was by my work as a roaming reporter and consultant, I could not help noticing how many people seemed to be afraid to let go and insisted on using their cell phones and wireless messaging devices.

My first thought when I saw a man answering his cell phone just as he was starting a boat ride that would be attacked by pirates was that perhaps it was the almighty and omnipresent supreme being calling to remind him that he did not have to be reachable anywhere and anytime and that there was nothing sinful about a little relaxation. When I later saw him sending off an email on yet another wireless device as he got off the boat, I realized that the man had a direct line to the devil.

My boat ride was to be attacked by sharks. Naturally, my handbag was waterproof, and I had turned off my wireless handheld and stowed it securely in an inner pocket. Following my natural instincts, I headed for a safe seat in the stern of the boat. Perhaps I would not experience the full effect of the shark attack, but at least I wouldn't get wet.

Immersion in the water world began almost immediately. Realizing that I was going to get soaked and that this would ruin my hair, my friend gallantly offered to change places with me so that he would be sitting on the outside and shoulder the brunt of the splashes that would occur on the ensuing voyage. That was when the boat careened.

"Man overboard!" cried all hands in unison. With the pitching of the boat, my friend had fallen off and was now holding on to the side for dear life. Although I am sure that he valued his life, he was also holding up his shirt pocket above the surface of the water in an attempt to protect his wireless handheld.

I reacted instantly by leaping up and grabbing my friend's hand to help him climb aboard the boat again. We were entering a perilous passage of the voyage, and holding on to my friend required an almost superhuman effort. The sharks would be attacking soon, and my friend realized that I was putting myself in danger to rescue him. In yet another demonstration of gallantry, my friend let go of my hand and forcefully pushed me back on the boat. Then the sharks were attacking, and I saw my friend disappearing beneath the waves.

When the ride ended and I climbed off the boat, I was surprised to see my friend standing at the exit and furiously punching the keys of his wireless handheld.

"Wow! That was a close one! I'm just sending a message to my wife to tell her that I saved you from drowning," said my friend as I approached. Unfortunately, as he quickly discovered, waterlogged wireless devices don't work very well. I started to take out my own handheld when I saw his wife approaching from behind. Apparently, she had been coming to meet him and witnessed the entire incident as he had fallen backwards while pushing me back on to the boat, gotten thoroughly soaked, stood up in what turned out to be knee-deep water and then waded to the exit just before our boat returned.

"Yes, I know, honey," said my friend's wife, coming up to him and giving him a big hug. "I was just coming to meet you when I saw your wireless wipeout."