In the US, Cingular Wireless has agreed to sell its subsidiary Cingular Interactive, the world’s largest Mobitex mobile data network operator, to affiliates of Cerberus Capital Management. Cingular Wireless will continue to resell the service and to use it for its corporate email.

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Digital

There to depend on

Richard Lambley reports from the Mobitex Association’s meeting in Gothenburg on a year of change for this high-reliability wireless data technology

First deployed in Sweden 18 years ago, Mobitex ought by now to be looking at least middle-aged, if not older. Yet in spite of growing competition from newer methods of transmitting wireless data – including GPRS and 3G – Mobitex has been enjoying a revival of interest.

In May, the Mobitex activities of Ericsson, the creator of what had been spun off into a separate company, Mobitex Technology, which is now bringing in a range of new products. The Mobitex Operators’ Association has reinvented itself as the Mobitex Association, offering a forum for all those interested in the technology, including users and equipment suppliers. And with a boost from such technical developments as a new high-performance all-in-one radio modem chip, and plans to migrate the infrastructure to an IP platform, Mobitex itself is expending beyond its original role in high-reliability two-way data networks towards a future which includes private data systems and low-cost machine-to-machine communications, and is finding new markets around the world, including the Middle East, Russia, India and China.

Seeing the reality

Kevin Swann, chairman of the Mobitex Association, believes that the hype over GSM/GPRS and other new technologies has until recently distorted the picture for system buyers. "Why would you commit to something that has been around for a few years when there’s this new and exciting technology that I’ve just read about that does everything?" he asks. "What’s happened now is that the people making these decisions have seen the reality of these large networks. They know their strengths, and they have a really good position for many applications: they are strong, they give good service and good coverage in certain applications. But there are applications that are becoming evident where Mobitex wins out.

"There are two sectors. One is mission-critical. If you have a mission-critical func-

Low latency (transmission delay) is a key feature of Mobitex. "In the US we do a huge business in point-of-sale", says Charles Nelson (above) of the network operator Circular Interactive. "There’s a typical approval of a credit card in around 0.5 seconds – there’s no way, with people standing there waiting, that they’re going to trust technologies that are going to have some sort of a delay."

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Association board member, "This fact first became evident in a series of natural disasters including hurricanes, floods, blizzards, wildfires and earthquakes, in which our network remained operational even as landline telecommunication and very often wireless voice were put out of commission."

Mobitek's foothold in government now includes some 300 US congressmen and staff, who rely upon its guaranteed transmission and receipted message delivery. "We developed an application that is PC-based so the Capitol Hill police can actually monitor which members have received and opened a message", continued Mr. Nelson. "If there's something that's pertinent to evacuating the Capitol or if they are taken off-site somewhere, they can literally determine who has been communicating with successfully."

But Cingular's customers do more with Mobitek than mobile email: there are applications in point-of-sale, remote alarms, automatic vehicle location, vending machines, building plant management, and field force automation. "In the US, we have eight of the largest telecoms networks dispatching their field service technicians", Mr. Nelson added.

New applications
As an operator of GSM, UMTS, cellular packet data and US-TDMA mobile networks as well as Mobitek, Cingular has been in a position to take a pragmatic view of mobile market needs. And while it expects its mobile phone networks to evolve, it foresees a need for Mobitek services extending for years into the future.

For machine-to-machine applications, Kevin Swann believes that the assured, immediate delivery of messages is often a basic requirement. "If it's 11 o'clock at night and you want to run your heavy machinery computer through the system and do all your numbers, it's no use if a third of them report in four hours later", he said. "There are going to be people who don't mind, for whom it isn't critical at all. But there are so many, we find that actually thought that the big bandwidth of 3G/GPRS was going to be the answer to everyone's problems. Now it's there, it is the answer to a lot of people's problems. But it's not all of the answers.

One speaker at the meeting for whom dependability is essential was Bill Delaney of the Australian company Technix, which runs a large Mobitek network used by the ambulance service of New South Wales. "We're paid to maintain service level agreements for the customer", he said. "If we don't deliver all of our messages in less than ten seconds, if we don't maintain the availability of the components at each of our management fees per month gets reduced — they take rebates off me."

"When we talk about the ability to sign contracts like that, the only technology I've been able to do that with is Mobitek."

In the Far East, Mobitek has been used for applications as diverse as share trading and even gambling. But one of the more original uses is in monitoring road traffic flows, for updating traffic management and vehicle navigation systems. Kevin Swann quotes the example of a taxi company which uses Mobitek for dispatching and for processing card payments for fares — but receives a discount on its subscription in return for allowing the network operator to track the taxis' movements. "They have found it to be a dramatically better traffic flow management data system than having things on bridges that are fixed", he says. "It gives you the flow, continuously, of where the traffic is."

Another new approach now being pursued by Mobitek Technology is so-called campus solutions — applications in offices or warehouses which generate a high volume of traffic in a confined area. "We have developed a new base station which is suitable for indoor use — it's very similar to a DECT base in concept and in form factor", says Folke Bergqvist, of the company. "So what you get is a different business model for the operators, to set up a way of providing low-cost, local coverage for Mobitek. And when they get out of the office, they can use the public network, and then pay a premium for that."

Mobitek... or Tetra?
In the UK, the national public Mobitek network built by Ram Mobile Data was bought in February by BT, which now operates it as BT Redcare Transcom. It serves a wide range of business needs, including mission-critical applications in the 'blue light' emergency services.

Kevin Swann believes that there is still a role for Mobitek among its traditional customers in the emergency services, even though they now have access to Tetra, with its extensive data potential. "Tetra is a very good network, a very good product", he says. "But
Among the speakers at the meeting was Bill Delaney of Technology, which operates a highly resilient 34-site Mobitex network in New South Wales for government users, initially for the ambulance service. Some 19 countries were represented in his audience.

Above, right: Kevin McNulty of BT, which has become a public wireless operator in the UK again with its recent takeover of the Transcomm network.

Below: Hendrik Koekelaar, of HiTechTechnologies Industrial Automation, showed the InfracLogic range of wireless control products based on DIN rail modules, with GSM or Mobitex communications. A starter kit is available.

Right: from Jordan, Yazen Mufri, chairman of Science Technology Investments Company, which is actively considering Mobitex for applications in the Middle East.

Among the opportunities for Mobitex, he believes, are UK’s two million vans and lorries, few of which yet have AVL or fleet management systems; and ‘loner worker’ protection, driven by new legislation. BT alone has 30,000 field technicians who work unaccompanied. Another opportunity has arisen with the impending closure of the old BT Paging network (now run by mmO2), due at the end of this year. “We’re seeing quite a lot of customers asking us about using Mobitex as a way to replace paging,” Mr McNulty said.

Commenting on BT’s takeover of the UK network, Andrew Firth, president and chief executive of Mobitex Technology observed: “People like BT don’t do these things by accident – they’ve got a plan.

“It’s a ringing endorsement of the technology and a lot of people have taken notice of it.”

An investor’s point of view was provided by Yazen Mufri, chairman of a Jordanian investment company which has extensive interests in wireless network operation in the Middle East.

it's fair to say that Tetra has actually been dominated by voice activity. It hasn't been used extensively for data, and to date I've not seen a market at all - it's all been hand-helds and mobiles and base stations.

"It's going to have a fantastic future, and Tetra will run for 20 years, and it's great. But it doesn't compete with the two core markets that Mobitex is targeting."

BT, it seems, now sees Mobitex as a growth area, in contrast to its traditional fixed line business, where it is facing a slow decline through commoditisation, convergence and increasing regulation. "Although BT no longer owns a cellular operator, it does see that there's very much a growing movement towards wireless communications", said Kevin McNulty, who recently took charge of the Transcomm network in the UK for BT. "Many of the things which were traditionally connected by fixed lines will inevitably be connected by wireless in the future."

**Service level agreements**

With secured communications and guaranteed delivery, Mobitex provides a basis for an offering backed by service level agreements. Mr McNulty explained that his role is to develop the operation in three markets in the UK. "The Transcomm business already had a strong market in the emergency services for field communication and we will continue with that business, and enhance and develop it", he said. "The second area is around transport and logistics, where we also provide vehicle location and location-based services... Traditionally we've been working with partners but as BT becomes more embedded in the Transcomm business we mean to launch our own range of AVL and Mobitex-linked services. And thirdly is machine-to-machine."

This last represents the connection with Redcare, a BT business providing secure communications for the protection of buildings and property. "Traditionally BT had used its own wireline technology, and some products used a GSM path for protection, but we will gradually replace that GSM path with a Mobitex path", Mr McNulty added. "We have to have a balanced business - and machine-to-machine is quite low-revenue, with a lot of volume at low revenues. So we will never be a 100 per cent Mobitex machine-to-machine play."

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East – although not yet in Mobitex itself. Mr Mufti believes that this year’s changes in the Mobitex world have transformed the outlook for the technology, addressing the ‘negative issues’ such as obsolescent switching technology and costly radio modems. “The first thing came from CML”, he said. “Their new chip promises to revolutionize the modern entry price and the flexibility, the size and power consumption, and immediately starts differentiating that transponder or modem from the GPRS ones. It will be a similar price level but more capable in what we want it to do – and not swamped by voice. You can depend on it when you really need it. Any security organisation that says, ‘No, we want to go on a public network’ ought to change their officers!”

Mr Mufti, was impressed by the efforts made to move the Mobitex platform forward on to modern computers, he said. “That immediately enables new, smaller systems to be built. Many organisations have small requirements. So if I’m a police force in a small country or small area, I would want a voice channel and I would want a data channel – and I would want them separate, because if one fails, I want the other to be there to depend on.”

“Many are moving to Tetra, and we have supplied Tetra in many areas. But it becomes all your eggs in one basket. So by Mobitex becoming affordable operationally on data, I have the ability to have two systems installed. The barriers to entry are disappearing.”

Mr Mufti mentioned two particular systems which have been proposed. One was a scheme for checking the identity of boats in the Arabian Gulf, using radio transponders.

“We really looked very hard and found that Mobitex offers the right solution because it’s not range-restricted, unlike GPRS”, Mr Mufti continued. “GPRS has a range restriction of 20 km, by the technology itself.”

Mobitex, on the other hand, would work anywhere within line of sight, and the transponders could even be interrogated from an airborne station up to 200 km away. However, the real value of the system would emerge through combining the Mobitex information with radar imaging, assigning an identity to each of the thousands of dots on the screen. A fisherman in trouble could press a button and his identity, location, cargo and size of vessel could be relayed instantly to the rescue services. In the same way, the radar system could also highlight all non-identified craft, enabling smuggling and other marine crime to be targeted. For such a system, or a low-cost transponder is an essential requirement, since fishermen cannot afford to pay thousands of dollars for the on-board equipment.

Other promising Middle East applications for Mobitex, Mr Mufti said, were in homeland security – for example, in protecting against natural disasters such as earthquake damage. “Surprisingly, quite a lot of the deaths happen because of fires and gas leaks”, he explained. “A city like Istanbul: the fault is 30 km away, the P-wave travels at eight kilometres per second, and you’ve got four seconds to react and do something.”

This might not seem long enough for any action at all. However, a network of seismic sensors coupled to a radio system could instantly shut off gas valves and other damage-prone equipment before the earthquake strikes. A simple, one-to-many radio application based on paging technology might have done the job. “But how do we test it that it is working, before an earthquake hits?”, asked Mr Mufti. With developments such as the new CML chip, he added, the cost of a Mobitex two-way terminal could be no more than $10-20 higher than a one-way paging device.

**How long can it last?**

What about the future of Mobitex? Andrew Fitton, president and chief executive of Mobitex Technology expresses no doubts. “We’re small, we’re flexible, and we have a technology that is significantly better in certain areas than its competitors”, he said.

“When I first came into this industry, I was told that Mobitex had a 1-2 year life. And that was about 1998. And if you ask somebody today, they’re pretty sure to tell you that it’s got a 5-7 year life. And I’m willing to bet that if you ask them in five or six years’ time, they’ll say to you, ‘It’s got a 5-7 year life.’”

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