INCISOR

NEWS FROM THE BLUETOOTH AND SHORT RANGE RF ENVIRONMENT APRIL 1999

BLUETOOTH COMES OF AGE AT CEBIT …

A large section of this month's issue is given over to a review of Bluetooth at CeBIT '99, where, if you weren't a smoke and mirrors sceptic, you could believe that Bluetooth was a here and now technology.

Almost all of the SIG founders put on Bluetooth displays. Some more successfully than others. Without question, Ericsson was most visible, with Bluetooth playing a major role on their dual stands. At the other end of the extreme, if IBM were displaying Bluetooth, Incisor couldn't find it. Their Bluetooth demo was certainly not where it was supposed to be according to the jointly produced, Bluetooth SIG folding CeBit leaflet. When questioned about Bluetooth, Big Blue's staff gave blank looks …

Toshiba's demo was carried out primarily by Nokia staff. A good demo, but hard to see due to the small space devoted to a display that lots of people wanted to look at. In addition to their own stand, and working with Toshiba, Nokia's skills were in big demand. Intel also relied upon them to carry out demo's on a far-flung corner of the Intel stand. As this was supposed to be the SIG's main demonstration, it was a little disappointing.

Perhaps the most important element of the whole CeBit exercise was that wherever Bluetooth was shown, crowds gathered. There is a hungry market out there. For sure, any publicity reticence by Bluetooth companies will be rewarded by the need to watch more pro-active players grab the limelight.

THE FUTURE IS COMING

Last month in Incisor, we speculated on some of the future products that might emerge as Bluetooth gains momentum in the consumer electronics industry. Predictably some of our readers questioned the vision of these products. So for those who doubt that short range RF can take over the future, here are some of the RF enabled product announcements that have emerged over the last month – all of them products that exist at least in a development lab.

It's not just the audio visual consumer market that has seen the possibility of Bluetooth, the White Goods market is at it too. First off the starting block this month is a connected Washing Machine from Merloni that contains an RF transmitter to keep in touch with its service status. One version even has a GSM phone to summon the service center when its performance degrades or it breaks down.

With an eye on helping the consumer spending boom, Electrolux have gone one further with a fridge containing a bar code scanner and mini computer. As you load your shopping you scan the codes, and do the same as you take things out again. Which lets the on-board computer keep a running tally of the contents and phone up your local internet connected supermarket as soon as you get half way down the last six-pack of lager. All it needs is a Bluetooth transmitter to go with your Bluetooth PSTN access point and your alcohol replenishment will arrive by half-time.

For those of us who still like a little exercise walking round the supermarkets, short range RF is out to get us spending more and exercising those arm muscles carrying it all back to the fridge. Tesco – the leading UK Supermarket chain, is experimenting with a computerised shopping trolley that lets you swipe your loyalty card through a display. Your identity is then radioed back to the central computer which decides what your buying preferences are and guides you round the store, pointing out special offers that will appeal to you based on your past shopping history. Before you get to the checkout, you could even call your fridge to see if you've forgotten anything.

Finally, when you get home, M.I.T. have got something to keep the kids happy – interactive cartoons. Up in Boston they've developed a cartoon called "Swamped" where you can manipulate a cartoon toy as you watch the action unfold on sceeen. As you move the toy around, its image moves on the screen, so you can control whether the mouse escapes or gets it.

The prospect of products without wires is already fascinating the development community. The arrival of low cost Bluetooth looks set to make that fascination a tidal wave of products not just for business, but for our High Streets as well.

SEE INSIDE FOR CeBIT 99 REVIEW

BLUETOOTH AT CEBIT

We predicted that CeBit would be the first venue where there was any real public display of Bluetooth products, and we were right. Although we're still several months away from the first public release of version 1.0 of the Bluetooth standard, a number of the SIG members and their close partners took this opportunity to show off their vision of Bluetooth at work.

Furthest down the track, at least in their public displays was Ericsson, who devoted a major part of their stand to Bluetooth demonstrations. As one might expect, the bulk of their development has been focussed around Bluetooth enabling the mobile phone, and this theme was carried over in their demonstrations. The sexiest product was a Bluetooth cordless headset. This came in a neat blue and grey unit which clips over the ear and presents a small microphone to the cheek. Bluetooth provided a very effective audio link to the new T18 handset, which also supports voice recognition for dialing.

Equally impressive was a digital camera fitted with a Bluetooth module, which was shown taking a picture, which was transmitted over a Bluetooth link to a mobile phone, thence over the GSM network to a second phone and PC. A small postcard picture took about 2 minutes to transmit, although the transmission time is dictated by the GSM network rather than Bluetooth. Roll on higher speeds and GPRS.

Ericsson's other demonstrations were more firmly notebook based, with Bluetooth being demonstrated in PC Card format, either synchronising data between PC's or being used to connect up to mobile phones, either for data transmission or for phonebook control.

Nokia were also demonstrating their solution, although they chose to do so on the Toshiba and Intel stands. Nokia have a smaller form factor for Bluetooth, with their solution housed in a Type II Compact Flash card. They had also taken a more integrated approach to the handset, integrating Bluetooth into the battery of the phone, whereas Ericsson have implemented a small clip-on module, similar to their current Infra Red Accessory. Again, synchronisation and remote access were demonstrated.

Nokia and Ericsson weren't alone with Bluetooth. The momentum behind it has ensured that others are developing the technology and a few were brave enough to put their solutions on show. DigiAnswer worked with Ericsson in the early phase of Bluetooth development, and were showing some of their solutions. They have a prototype PC Card which was in evidence on a few stands, as well as some headset solutions which they were promoting themselves and also with GN Netcom. A more innovative solution came from C-Tech, who have developed an optical pen which reads and translates text line by line. As they are situated next to Ericsson in Lund, it's hardly surprising that they have embraced the mantra of Bluetooth, and they had a pen with built in Bluetooth reading text and importing it into Word in what was arguably the slickest demonstrations of Bluetooth (see below).

A few other handset manufacturers were also announcing their Bluetooth plans. Motorola joined Nokia and Ericsson by confirming that they intended to be in the first tranche of Bluetooth enabled handsets, but the most innovative approach came from NEC with their Gateway concept. This accepted the new role of a Bluetooth phone as a wireless router, and presented the handset as a featureless egg-sized module, with a docking headset containing a retractable microphone. They argue that with advances in voice recognition, and a companion organiser, there's no longer a need for a keyboard on the phone – you can dial with voice, and use the organiser for phone management as well as email and internet access.

Finally for budding implementers, Ericsson partners VLSI and Symbionics were present at CeBit offering Bluetooth silicon and a developer's kit. Now that the cat is out of the bag with these two, we're likely to see a rash of other Bluetooth silicon and software vendors show their hand.

So there was enough to convince the public that Bluetooth is on its way. It was educative to walk around many of the halls looking at the products on display and think "Would Bluetooth enhance this?" The answer was a resounding yes, and I suspect that a year on we'll be marveling at the products that don't incorporate Bluetooth.

C-TECH WINS INCISOR "BEST DEMO" VOTE

One of the few independent demonstrations was from C-Tech – one of six companies offering character recognition pens with translation. These units scan a line of text and then offer an instant translation, with the possibility of transmitting the data to a PC. C-Tech (which is part funded by Ericsson) offered the best demonstration, both in terms of the pen, and also the best overall Bluetooth demo.

HEADSET MANUFACTURER EMBRACES BLUETOOTH

In a closed section of their impressive stand at CeBit, world number two headset manufacturer GN Netcom showed a number of products which incorporated Bluetooth technology.

Partnered with fellow Danish company and Bluetooth trailblazers Digianswer, GN Netcom were one of very few non-SIG founding companies to be demonstrating Bluetooth.

But showing a Bluetooth cordless headset, which GN Netcom will take into its traditional office and mobile phone application areas, was apparently not enough of a breakthrough for the company. GN Netcom flexed its technology muscles by showing and demonstrating a Bluetooth wireless headset with built-in noise cancellation. This clever device actively cancels noise within the ear-piece, enabling the headset user to carry on a conversation even in noisy environments, such as while walking in the street, or in a car.

The value of this system was at first difficult to ascertain. When Incisor tried the headset in the closed area of GN Netcom's stand, we heard nothing. And that was the point – there is no background noise. When we walked out into the busy exhibition hall, we were able to carry on a conversation with GN Netcom's Leo Larsen with a previously unknown level of clarity and ease.

Whether GN Netcom's major rival, Plantronics, is as far down this road, we do not know. For the time being, it looks like GN Netcom has a head-start!

NEC DEMONSTRATES TECHNOLOGY AWARENESS

Most impressive presentation from a Japanese manufacturer was NEC's display, which not only showed a very well thought out range of handsets for the coming year, including a nice concept communicator – the ViewPhone, but indicated a robust feeling of where the market is going.

They showed that they have been considering the effect Bluetooth will have on the handset market with a concept phone called Gateway, where voice recognition replaces the keyboard, and the base handset becomes a compact radio router. It may never make it to market, but it shows a degree of understanding of the future that wasn't evident elsewhere.

It was also impressive to see so many phones connected to laptops on the NEC stand, including a new software cable option. For all the talk of mobile data and convergence they stood out as the one example of it happening. Many companies now make laptops and handsets, but they invariably put them on opposite ends of the stand, with no sign that they will ever come together. As far as internal channel and strategy is concerned, convergence still seems to be a concept to be talked about, not implemented. So full marks for trying to NEC.

IS IT BLUETOOTH OR IS IT ERICSSON?

We all know that Ericsson are one of the members of the Bluetooth SIG, and that Bluetooth is based on their earlier MC-Link short range RF developments. But at the CeBit exhibition in Hanover one could have been mistaken for thinking that Ericsson was Bluetooth.

Bluetooth were not represented at CeBit as a separate body, either with a stand, general literature or a Press Conference, but Ericsson more than made up for the omission. As well as major demonstrations on the Ericsson stands, we were greeted with a new Bluetooth logo program, lectures, tie-pins, lapel badges and a brand new web site. In short everything to convince the wider world that Ericsson and Bluetooth are synonymous.

The message for everyone who wants to incorporate Bluetooth was put very straightforwardly - "Ericsson developed the concept, then they gave it to the world, now we'll provide the solutions."

As well as showing their own products, Ericsson were also offering modules, data sheets, development kits and even training courses to get us all up to speed. Which is all very worthy, well deserved from their pioneering, and a testament to their development skills, but raised the question "Is there anyone else out there?" If this is going to be an open standard, and if Bluetooth is going to succeed in the volumes we believe it will, we need to see some other players take the field. If the industry starts to believe that Bluetooth is a single source solution, it will die. So let's look forward to some product announcements from developers who are currently keeping their heads below the parapet in the next issue of Incisor.

IS THE PC INDUSTRY LOSING CONTROL?

CHINKS APPEAR IN MICROSOFT ARMOUR

While reviewing Bluetooth activity at CeBit, a major trend was impossible to ignore – the changing hierarchy in the IT industry. This will affect all players in the Bluetooth SIG, and merits consideration in this publication.

Last year IDC, along with many others predicted the demise of the PC as the power base driving the industry forward, judging the driving role to be shifting to the mobile device, and estimating that the dominance of the PC would have eroded within 6 years. This CeBit the telecomms industry was proudly in the ascendant, with the PC makers looking more embattled than they have ever done before. Deutsche Telecom surpassed themselves this year by building their own exhibition Hall.

Nowhere was this more evident than in the battle between Microsoft and Symbian for the mobile market. Microsoft has often been slow in recognising markets outside its indigenous PC territory. It was late to realise the importance of the Internet, and despite throwing money at the Internet has had limited success. It may have won the battle for the browser, but that is not where the revenue is coming from. Similarly, Microsoft has been slow to identify the shift of computing away from the traditional PC platform towards the handheld device. The first threat came from Palm, which elicited the response of Windows CE. Even with the might of the Microsoft marketing machine behind it, CE has still failed to produce significant volumes of sales.

The new threat is the battle for dominance in the telecomms market. Microsoft would like to be a major player but faces a serious challenge from Symbian. In the past Microsoft has managed to spend its way into many emerging markets, but Symbian is in a very different league to Palm. First, Symbian has an efficient, proven, embedded operating system – EPOC32. Secondly it's being backed by a consortium of hardware vendors – Ericsson, Nokia and Motorola who each have the marketing and manufacturing muscle to take on Microsoft, and who are already successful in a market with significantly higher growth than the PC market.

In its corner Microsoft has only managed to gather together a limited set of partners for its WirelessKnowledge mobile initiative. Heading up the partners are Qualcomm, who have failed to achieve any real share of the mobile market outside the US, and even there only a limited penetration, 3-COM who are currently using the Palm O/S and not Windows, and Symbol. The remaining area of support for CE in a mobile environment is in Japan and the far East – companies like Matsushita, Mitsubishi and Samsung. If these defect to the Symbian camp, Microsoft's position outside the PC market will be seriously dented.

Each day at CeBit, Symbian made announcements about new partnerships – with NTT in Japan, and with Sun for Java and Jini support, as well as demonstrating its Quantum and Jedi platforms, with Ericsson showing the first real Symbian product in the form of the R380 communicator. For one of the first times in its history, Microsoft lost the PR battle. Journalists didn't want to hear Microsoft's view of the future. They did want to hear Symbian's.

It was interesting to hear Symbian say that they feel that their market is NOT the consumer, but the vertical market. In response, Microsoft also qualified their strategy for CE by saying that they were not necessarily concerned if CE were not to be chosen as the O/S of choice for the wireless platform. Which is interesting. If CE is not going to succeed here, the question is where will it win? Probably not in the games market, where Sony have already increased their lead, with the Playstation 2 leaping ahead of the hardware spec for Dreamcast CE platform. In the HPC market, small laptops are starting to approach the integration of Jupiter machines, and concept products like Cyrix's Webpad are likely to encroach on CE's market. Set top boxes are moving back to more efficient O/S's after an initial courtship with CE. And a year after Clarion launched their AutoPC, there's little sign of it appearing in dashboards. Other than the vertical markets, there's only the hope of a replacement for Windows '9x in the home.

Microsoft's marketing muscle will do its best to keep CE alive, but it has had trouble in establishing itself over the last two and a half years and the premises on which it was built are beginning to falter. Although a lot of pundits raised questions about CE, what has happened looks like a fundamental power shift. It could be that we're at the start of a trend where operation is more important than operating system and the dominance of players like Microsoft will recede.

UK START-UP TO TARGET WIRELESS APPS

Former members of the Digital UK Alta Vista development team have set up an UK company to address the need for wireless applications.

Called Peramon Technology, the company has already expressed an interest in Bluetooth claiming it "fits in well with our strategy," said John Kell, Research and Development Director.

The company was formed following the completion of a technology transfer agreement for a web-based application from Compaq and is backed by Royal Bank Development Capital.

The company will reveal more of its intentions next month when it will unveil its plans to sell its products through resellers, VARs and ISPs.

See www.peramon.com

CYRIX TO BLUETOOTH ENABLE WEBPAD

National Semiconductor subsidiary Cyrix has hinted that it will enable its WebPAD wireless Internet access device to the Bluetooth standard.

The WebPAD is currently at reference design stage and Cyrix has just announced a deal with Tatung whereby Tatung will be the first Original Design Manufacturer (ODM) to develop WebPAD for the mass market.

The WebPAD is basically intended to be a low cost portable device that enables users to access the Internet or send and retrieve email from anywhere around the home and office.

See national.com for more information

INCISOR INTERVIEW:

INCISOR MEETS ANDERS EDLUND

Head of Bluetooth Marketing, Ericsson Mobile Communications AB

While the Bluetooth Special Interest Group (SIG) is made up of five technology leaders – Ericsson, Nokia, IBM, Intel and Toshiba, there is much evidence that the primary driving force is Ericsson. Undoubtedly, Ericsson technology is the foundation of Bluetooth, but it is the Swedish company's dynamic, and some say aggressive marketing which is causing it to be perceived to be the leading light.

It is relevant, then, for Incisor to talk to Anders Edlund, the man in charge of Bluetooth marketing for Ericsson, and to ask his opinions on many topical aspects of Bluetooth's development.

Incisor: Just how important is Bluetooth to Ericsson?

AE: Ericsson is already very strong in telecommunications, but Bluetooth is taking us into new areas. We have committed a lot of time and effort to building our Bluetooth presence. Our development started more than five years ago. Today, the Bluetooth team within Ericsson is a large group, and operates as a full profit centre. Bluetooth is very important to us. Over the years we have been involved in developing and marketing a number of standards, with lesser or greater degrees of success. Bluetooth is one which we are determined will succeed.

Incisor: At CeBit this year, it definitely seemed that telecomms companies were dominating, and that is a reflection of what seems to be happening in the Bluetooth SIG. Do you agree that the PC industry is currently lagging behind, and why?

AE: I think this might be true, and it is almost certainly due to the commercial success of some telecomms companies. The mobile phone is now the best selling electrical item of all time. Inevitably that means that the major players are very successful, and have money to spend, therefore this might be a marketing lead gain that the telecomms companies have made. Everybody accepts that some players in the PC industry are having a hard time, with ever-decreasing margins and intense competition. It is not a completely clear-cut situation, though. Even some of the phone companies are facing tough times, while some of the PC companies are doing very well. None of us can afford to relax.

Incisor: Speaking of Bluetooth specifically, do you see it as an IT product, or is it wider?

AE: Obviously the roots of Bluetooth are in telecomms, but looking forward, it will cross all sectors. The issue is, where do you draw the line? With the ongoing injection of technology into everyday life it's becoming increasingly difficult to define what is IT and what isn't. Nokia's Communicator was the first product to provide the real bridge between the two worlds in the same product, and now we have of course launched the Ericsson 380 which is bringing the concept to a manageable size. Bluetooth will soon be the true bridge, joining products from the two segments and making them communicate together seamlessly and with little or no effort. If you think real long term I think it is very likely that we will see Bluetooth in many other segments like automotive, home entertainment etc.

Incisor: There is a real feeling that Bluetooth, after many others have set out with similar goals, is the standard that will dominate. Why do you think this is?

AE: To start, Bluetooth represents a major research effort for Ericsson to create a cost-effective platform for dynamic connectivity. IrDA has been used for a while, but has never really got off the ground. That we were able to convince four of the world's leading IT and telecom companies about the Bluetooth idea proves the fundamental "rightness" of the concept, and others have been quick to recognise that. Finally, I think the timing was right. Everybody was looking for Bluetooth, or what Bluetooth set out to do.

Incisor: If Bluetooth is going to expose Ericsson to many new, non-IT industries, how will you cope? Are you correctly structured to deal with manufacturers producing products as diverse as aeroplanes, hi-fi, cameras etc.

AE: Ericsson's primary goal is to continue to develop the specification. Our main business interest is to enhance our own product, and of course, we will have another business licensing our implementation of the technology. We will not become involved in these other areas of product development. We have a separate company, Ericsson Components, which already has direct dealings with all sorts of companies.

Incisor: Another much talked about issue is home networking, with comparisons made between Bluetooth and HomeRF. What is your view?

AE: Bluetooth is not a networking technology. It is about device to device connectivity and bridging to networks – PSTN and GSM, for example – and synchronisation of data. Having said that, there is nothing to stop anybody using Bluetooth in this way, but it is not the way it is positioned.

INCISOR INTERVIEW continued

Incisor: The PC- side of Bluetooth sees support from Microsoft as being very important. How do you feel?

AE: Yes, we feel that it is crucial for Bluetooth to be supported by Microsoft operating systems. The Bluetooth SIG has been in conversation with Microsoft for some time, and I think it is true to say that we have encouraged them to eventually support Bluetooth officially. In turn, they have already made positive statements about the technology. It's up to Microsoft of course but I hope that you will see announcements before too long. At the same time, it is important that Bluetooth enjoys wide operating system support – Symbian, for example. Ericsson has worked closely with Symbian, and launched our MC218 palm-top computer and R380, which both run on Symbian's EPOC operating system.

Incisor: Ericsson's dynamic marketing of Bluetooth, and apparent leadership of the SIG has lead to comments that Ericsson is Bluetooth, is Ericsson. How would you respond?

AE: Well, Ericsson did initiate Bluetooth. Since that time we have worked very closely with a group of much respected partners to create the specification and to bring it to market. Each of those companies has an equal opportunity to establish their own position. Bluetooth is very important to Ericsson, and we will continue to promote it. As in any business situation, a company can invest whatever level of effort it wishes to achieve its goals. It is in every SIG group company's interest that everything possible is done to achieve success for the specification. We will certainly continue to do our bit!

Incisor: Finally, when will Ericsson launch the first Bluetooth products?

AE: The Bluetooth Marketing Group have worked under the assumption that first products will appear in October, at Telecomms '99 in Geneva.

WIRELESS VOX POP

This month's vox pop asks a couple of Bluetooth players what they think on the subject of Bluetooth and wireless networking – a subject which has generated a lot of debate!

WARREN ALLEN, TOSHIBA

"As far as wireless LAN is concerned, the first release of the Bluetooth specification will probably focus on point-to-point connections for data and voice connections between several types of devices -- especially mobile PCs, mobile phones, handheld PCs, and network access points, including LAN access points. A later version of the spec will address what we call 'piconets' - eight-node personal workgroups, which may then be bridged together to form larger 'scatternets'.

I think that there will be a big market for products that are more specifically targeted for wireless LAN applications, especially those build to the IEEE 802.11 specification, but quite possibly for Home RF as well. Bluetooth's usage models overlap to some extent with those of these other two technologies, but Bluetooth supports a much wider range of usage models and device types than 802.11 does, clearly, and it is the only one of these three that is optimised specifically for mobile devices -- in terms of cost, size, and power-consumption. This latter set of benefits is what enables Toshiba and other OEMs -- of all sorts of cost-sensitive devices -- to actually integrate the Bluetooth technology into their products, rather than offer it only as an (always more expensive) add-on accessory."

GEOFF JACKMAN, ZOOM INTERNATIONAL

"Bluetooth is driven by the telecoms guys at the moment and its primary focus is for mobile phone end connectivity and is short range. What we have with the 802 standard is a much larger range and it's not designed to encompass mobile phones. The two technology standards are in fact complimentary and not competitive. Will the standards overlap? I don't know at the moment. A lot depends on the data speeds proposed by the mobile phone world, but we're not talking rocket speeds here."

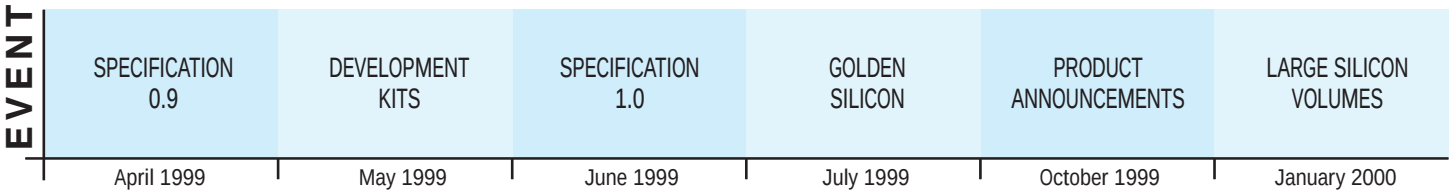
WIRELESS INDUSTRY CALENDAR OF EVENTS

DATE	EVENT	LOCATION	NOTES	LINK
May 10 - 12	Telecoms/IT Competitive Intelligence Conference	Hyatt Harborside Hotel, Boston USA	-	Frost & Sullivan - www.frost.com/conferences/tlb
May 26 - 27	Embedded Systems Show	Olympia, London	-	htt://www.eda-expos.co.uk
June 9 - 11	Bluetooth - enabling the next generation of connectivity	Queen Elizabeth II Conference Centre, London	-	IBC Conferences - +44 (0)171 453 5452 www.ibctelecoms.com/bluetooth
June 29 - July 01	Computer Telephony Expo/ Networks Telecom 99	NEC, Birmingham	- -	- -
October 10-17	Telecom '99	Palexpo Geneva	-	http://www.telecom99.com
October 26-27	Mobile Handset Development 1998	London	Speech by Örjan Johansson - Embedded short link radio - effect on usage.	http://www.iir-conferences.com/handset2.html

Further Bluetooth events will be added to the calendar as soon as they are announced. See notes below regarding editorial submissions.

PRODUCT ROLLOUT

At the time of print, this was the expected scheduling for the rollout.



BLUETOOTH SPECIFICATION SCHEDULE FIRMS UP

After delays in the last few releases of the specification, the SIG have finally released dates for the major releases the development community have been waiting for.

Everyone has been waiting for Version 0.9 of the specification, in the hope that it will fill in the blank pages of 0.8. That date is now announced – it will be posted to members on the web site on 29th April.

After that the big date is for Version 1.0, which looks set to be released around 9th June, to correspond with the Bluetooth conference running in London that week. That gives a gap of just 5 weeks to tie up any loose ends and to get the interoperability testing to a releasable level. This is causing some members to wonder whether we'll actually get full test routines to go with Version 1.0, or whether they will follow later in the year.

Looking further ahead, it looks as if 3-COM is being co-opted onto the SIG specification committee to speed up the definition of Version 2.0, which will provide support for Scatternets, although the best estimate for when this will appear is around March 2000. Other members are also pushing for higher data rates, higher frequencies and intermediate power versions, so the second half of the year is likely to see a further expansion of the SIG to try and work out what comes in Version 3.0.

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