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Wi-Fi VoIP with Cicero

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No sooner had voice over IP established itself at the beachhead of the telecoms industry than wireless VoIP came a knocking at the same door - and until WiMAX or any other wide-area broadband wireless technology gains market traction, wireless VoIP will typically be synonymous with voice over Wi-Fi. In the past few months alone, there have been a number of announcements, by significant industry players, promoting solutions to make pushing voice packets over Wi-Fi networks a commercial reality. At 3GSM in Cannes, Skype announced that its VoIP client will be leveraged on Wi-Fi enabled handsets from both Motorola and i-mate; Philips has announced a cellular handset reference platform with integrated Wi-Fi and support for the fixed-mobile UMA standard; and rumours surfaced this week that Vonage is on the verge of adding a Wi-Fi voice element to its residential VoIP service.

On one hand, implementing voice over Wi-Fi can be a fairly straight forward process. Whether the device is a Wi-Fi notebook, PDA or mobile phone, it simply requires the installation of a softphone client (such Xten's softphone or the Skype client) and an account with a VoIP service provider. In addition to a network identifier, many VoIP providers will also provide each customer with a PSTN number so both incoming and outgoing PSTN calls can be made and received.

However, without a more integrated approach to marrying client and network infrastructure technologies, it is difficult to manage issues which arise with wireless voice transmissions: these include quality of service as signal strength degrades, as well as hand-off between access points as the caller moves throughout the coverage area. Integrating with cellular features on both the client and the network side also helps service providers to better monitize on offering wireless VoIP.

With this room for innovation, there are a number of smaller companies attempting to secure a seat on the wireless VoIP bandwagon. Typically, these companies have developed end-to-end solutions which are offered through service providers and consist of both a network infrastructure and a client application element. Some of these companies, like Kineto, have a standards-based solution; in Kineto's case, it is the UMA standard. Others, like Cicero Networks, have SIP and RTP compliant implementations which, in Cicero's case, have been extended to add functionality.
Based in Ireland, Cicero Networks is a private start-up founded in 2002 and the company released version 2.0 of its Wi-Fi VoIP solution in March this year. Its target markets are fixed-line operators, alternative service providers and large enterprises looking to leverage the economic benefits of converged cellular/Wi-Fi devices.

These economic benefits are not insignificant. In an example drawn out by Cicero for its native Irish market, the cost of routing a three minute outbound call from a cellular/Wi-Fi device over O2's mobile network and Eircom's fixed network is five times more expensive than if the same call was simply routed over Wi-Fi and then onto the fixed network.

Ross Brennan, Cicero co-founder and CEO, acknowledges that it is the enterprise which represents Cicero's primary audience, either as direct customers or, more typically, through a telco provider which has incorporated the Cicero infrastructure into its network. Last month, Irish Telco, Talktelecom, became the first European wireline operator to offer VoWi-Fi services, deploying the Cicero solution to offer wireless VoIP to its corporate customers.

Other customers on Cicero's radar are cable operators and MNVOs, but Brennan believes that the cellular operators are still resistant to the idea of integrating their cellular networks with other wireless technologies.

Although it is IP-bearer agnostic, the Cicero solution is very much a Wi-Fi voice technology and it is optimised for the delivery of voice packets over a local wireless LAN onto the PSTN and visa versa. Two key optimisations are quality of service control and access point handoff. By monitoring the strength of the Wi-Fi signal and the bandwidth available within the network, the Cicero solution is able to manage QoS by dynamically adjusting the level of voice compression, using, for

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example, more vigorous compression when bandwidth becomes restricted. And again, by monitoring Wi-Fi signal strength at the network level - not just of the associated access point, but also neighbouring access points - the system can manage an access point hand-off if the caller moves out of range of one AP into the coverage area of another. Brennan is reluctant to refer to this handoff as "seamless" but he points out that if the access point infrastructure is provided by one of Cicero's vendor partners, such as Colubris, the hand-off will be "imperceptible" to the caller.

Cicero's Pocket PC softphone

Cicero's decision to focus on hand-off between access points as opposed to hand-off between the Wi-Fi access point and the wide-area cellular network is interesting since this is opposite to the approach taken by the UMA standard. While UMA will support any access point hand-off which is natively present in the network, the standard itself does not define or control AP to AP hand-off. This is seen as one of the failings of UMA since it is far more common for a caller to move within the local area during a call, than it is for the caller to leave the local area altogether and move into the wide area.

Another advantage of the Cicero solution over UMA is that its softphone client can be placed on devices with a simple software installation. The Cicero softphone is presently available for Windows Mobile Pocket PC and Smartphone devices and Symbian UIQ and Series 60 phones. By comparison, UMA sits at a deeper level of the handset telephony stack and must therefore be implemented by the handset vendor. This will limit the installed based of UMA devices in the market (there are still none which are commercially available) while the Cicero client can, in theory, work on any existing Wi-Fi enabled Windows Mobile and Symbian device – although this will depend on the processing capability of the device since voice compression must takes place at the software level.

Cicero will face competition from UMA supporters, like Kineto, and other VoWi-Fi solution specialists, but the biggest problem for all these companies will be the proliferation of Wi-Fi enabled handsets into the market. While we believe that a range of such handsets will be released this year, it depends on how quickly they are taken up by the enterprise.

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TOP STORIES

Motorola formalizes industry alliance for its dual-mode platform

Motorola's long awaited Wi-Fi/cellular handsets and enterprise platform should launch in late summer, and in the mean time, the vendor is trying to attract broader industry support for the technology, which has been criticized for forcing companies to use 802.11a flavour of Wi-Fi.

Last July, Motorola promised to set up an industry group looking to put some of its work, carried out with Avaya and Proxim, into the standards process and to offer interfaces openly to boost uptake and try to create a de facto standard for enterprise VoWLAN/cellular convergence.

In particular, Motorola believes it can open up its approach to improving hand-off times between the different networks. This will be a key focus of work by the IEEE for future WLAN standards, and by start-ups focused on voice such as Meru.

The group has now been formalized under the name SCCAN (Seamless Converged Communication Across Networks) Forum, and has been joined by three switchmakers that have been particularly interested in voice and the hand-off and quality of service issues associated with it. These are Chantry Networks, now owned by Siemens, Meru Networks, which claims to offer superior QoS to the upcoming Wi-F standard extension, 802.11e, and Colubris, which also has a separate new alliance with

Vonage tests routers for mobile VoIP

VoIP service leader Vonage is poised to launch a wireless version and is testing Linksys Wi-Fi routers for the purpose, according to news service CNET.

Vonage is also believed to be testing a WLAN handset, which would work with the router to enable users to move around their home or office, in reach of a Wi-Fi access point.

Vonage is also likely to market the solution to hotspot providers as a value added service. Most hotspots currently do not support voice quality of service, or are complicated for users to set up and access for VoIP. The routers would carry out most of that effort automatically.

Skype, the peer-to-peer VoIP service, said it is also working on a Wi-Fi handset approach similar to Vonage's.

Avaya (see separate item). Also joining the Forum is 2Wire.

It will be lost on nobody that these new switchmakers are signing up just as the original partner, Proxim, has said it is in financial danger. Chantry, Meru and Colubris would presumably be eager to take its place as the preferred partner for giant Motorola, which has a highly advanced convergence program encompassing cellular, Wi-Fi, WiMAX and other networks.

Motorola and Avaya said they are trialing a dual-mode WLAN/GSM phone developed by Motorola called CN620, which can be used with a centralized Wi-Fi controller and lightweight access points, co-developed by group members.

"CN620 is our enterprise seamless mobility solution currently in early introduction trials," said Jim Wojnarowski, director of industry standards and technical marketing at Motorola, and the vendor's representative at SCCAN. "The next step at the conclusion of the trials will be to take feedback we have learned, make the last few and final tune-ups to the system, and then enter the commercial marketplace in a much larger way. We expect it to be later this summer."

The platform will also support standard access points supporting the upcoming 802.11e QoS standard.

Motorola is also a passionate supporter of the Unlicensed Mobile Access (UMA) convergence technology for handing off between networks using Wi-Fi or Bluetooth. It said UMA is not directly involved in the SCCAN work though, in some ways, it is seeking to address a similar problem.

Hopes rise for UltraWideBand harmony

There are rising hopes that the long war over UltraWideBand standards may be resolved soon. The Freescale-led UWB Forum is making increasingly strong indications that it would be prepared to work on interoperability with rival WiMedia Alliance, led by Texas Instruments and Intel, probably using convergence technology from start-up Pulse~Link. If such a proposal materializes, as expected, at the next IEEE standards group meeting, it would be an indication that the UWB Forum now believes it cannot win the battle and that it would be better to work with the WiMedia Alliance than be sidelined altogether.

The pressure to resolve the war over which UWB technology would provide the basis for the proposed IEEE 802.15.3a personal area network standard is mounting, especially with the prospect of the 802.15.3a physical layer being adopted for other IEEE standards such as Bluetooth and ZigBee. An end to the battle would also be another motivation for regulators around the world to make quick decisions on opening up spectrum for UWB, an essential prerequisite for creating the global market in short range networks – especially in the digital home – that Intel and other supporters dream of.

An important player in this drama will be Pulse~Link, which joined the UWB Forum last week (see Blueprint Wi-Fi May 11). The innovative company, which focuses on UWB over LAN distances and over wireline as well as wireless media, has previously remained neutral, focusing on different markets to the proposed standard. However, it did seek to push its own convergence technology, Common Signalling Mode, to the IEEE as a method of allowing coexistence – though not interoperability – between the two warring platforms, and this technology could now provide the basis of a harmonization effort. In its initial attempt, it gained support from Freescale but not the WiMedia Alliance, making its choice of the UWB Forum unsurprising.

Pulse~Link becomes a promoter member of the Forum and brings its CWave UWB technology to the effort.

President Bruce Watkins said that the UWB Forum was open to working with other UWB technologies, depending on the application, including the WiMedia Alliance's Multiband OFDM and CWave.

Security group warns of VPN vulnerabilities

The UK's National Infrastructure Security Co-ordination Center (NISCC) has warned of potential attacks on the IPSec protocol used in browser-based virtual private networks, which could render encrypted messages as plain text with only "moderate effort". This would affect many remote communications to enterprise networks via Wi-Fi and other networks, with IPSec becoming increasingly popular among mobile workers.

The NISCC describes the weakness as "severe" and says it applies to IPSec configurations that rely on Encapsulating Security Payload (ESP) in tunnel mode with confidentiality only, or with integrity protection offered by a higher layer protocol.

The attacks need to be carried out many times before they are successful, but once this phase is reached, "the results can be reused to efficiently recover the contents of further inner packets". The attacks are fully automatable.

The main safeguards that companies should take are to configure ESP to use both confidentiality and integrity protection; use the AH protocol alongside ESP to provide integrity protection; and filter ICMP messages at a firewall or security gateway.

The full advisory is at http://www.niscc.gov.uk/niscc/docs/al-20050509-00386.html?lang=en

Nintendo and Microsoft beef up wireless gaming

Nintendo and Microsoft are both enhancing the Wi-Fi capabilities of their gaming platforms as they seek to attack Sony's PlayStation range.

The Nintendo DS dual-screen gaming handheld already has built-in 802.11b, but now the Japanese vendor has announced plans to build a network of 1,000 free hotspots in Japan to be used primarily by gamers. Other Wi-Fi devices would not be excluded but the marketing and environment would be geared to DS users, a move that follows the success of online gaming cafes in South Korea.

Charges for DS users in the Nintendo locations will be incurred only through the third party game publishers – Nintendo will not, itself, charge any fees, since its aim is to encourage usage and increase the desirability of the DS.

In the US, Nintendo is also seeking to leverage Wi-Fi more aggressively to encourage advanced activities, such as massively multiplayer games, on its platform. It will partner with IGN to use the latter's GameSpy technology for easy links into Wi-Fi hotspots or home WLANs, with minimal configuration changes needed. Nintendo will, again, not charge end users any subscription charges for using the DS while online though third party publishers may do so. GameSpy is middleware that is used by the Sony PlayStation2 and other games consoles for fast game 'match making' – easing the process of finding online opponents round the world over wired or Wi-Fi internet links. Nintendo is starting to develop games to support global online play over Wi-Fi on the DS, the first being the upcoming Animal Crossing.

Nintendo says its next home console, codenamed Revolution, will also have in-built Wi-Fi for integration into home networks. The company is also looking at options to bring DS users online via European wireless partnerships.

Over at Microsoft, a wireless capable version of the Xbox gaming console has been unveiled. The Xbox 360 is designed to work with high definition televisions and has built-in 802.11b, 802.11g and 802.11a connections. It can support up to four wireless game controllers.

Fiberlink adds Skype to remote access portfolio

Corporate remote access provider Fiberlink was later than some, such as iPass, to extend from dial-up connections to wireless, but it is now aiming to provide the most complete range of access options on the market. Its Extend360 software now supports Wi-Fi, dial-up and CDMA, and it is shortly to add CDMA EV-DO and support for the free peer-to-peer VoIP service, Skype.

Another new introduction to the Fiberlink service is anti-spyware checking, via Webroot Software's SpySweeper software.

It is likely that Fiberlink is partnering with Verizon Wireless for its EV-DO access – a network that currently covers 30 major US cities such as New York and Los Angeles. However, Fiberlink – unlike Verizon – does not see EV-DO as a replacement for Wi-Fi but just as "an option".

The company has also signed a deal with Skype, allowing Extend360 users to access Skype, a combination that Fiberlink claims gets round some security issues with the VoIP system and makes it more suitable for enterprise use. Extend360 brings "higher levels of security during Skype peer-to-peer transactions", it claims.

Skype is available on Windows, Macintosh, Linux and PocketPC, while Fiberlink's Extend360 software is limited to Windows and Mac users, although it is evaluating PDA and smartphone support for future releases.

Nokia introduces enterprise Wi-Fi platform

Nokia has unveiled the Local Business Connectivity Solution, which connects a company's mobile devices to enterprise systems using Wi-Fi or Bluetooth alongside cellular.

Like other multi-network remote access solutions, Nokia's technology handles security and management issues and enables enterprises to recognize, authenticate and authorize employee's mobile devices when they arrive in the coverage area.

"Enterprises are mobilizing their applications to increase their productivity. We have developed a local connectivity solution that strengthens the mobilization of the existing services and supports the development of new ones," said Jouni Malinen, venture manager at Nokia Ventures Organization.

Personal information management, messaging, browsing, and content distribution are additional mobile services that can optionally be delivered and managed by the Nokia software.

The integrator Application Programming Interface (API) offers mobilization of enterprise specific services with context awareness, where the services can be made dependent on the user or device location, status and time.

The solution is built around client software for smartphones supporting Nokia's Series 60 and Series 80 platform – mainly Nokia's own models, but potentially also some phones from Siemens and others. Along with the client software, the solution contains small multi-radio Nokia Service Point for mobile device connectivity, providing Bluetooth coverage and interfacing to enterprise existing Wlan infrastructure, and Nokia Service Manager for user rights, device, and application management.

The product is the latest move by Nokia to makes its smartphones a central client device within large enterprises, challenging the laptop and Windows PDA and increasing the Finnish giant's own margins and influence by taking it into the heart of the mobile enterprise infrastructure.

The first reseller for the software is Fujitsu Services in Finland.

HOTSPOTS

Nextel moves into Wi-Fi with Boingo and Wayport

Nextel, which has been one of the most active of the US cellcos in trialling broadband wireless services to run alongside its core cellular network, is offering a Wi-Fi service aimed at business travellers, in partnership with aggregators Boingo Wireless and Wayport.

Nextel's future parent Sprint has one of the most aggressive hotspot roll-out plans in the US, through a range of aggregator partners and, in particular, an alliance with Wayport. The two telcos' services will presumably be integrated post-merger and could also be incorporated into future plans by the combined operator to create a broadband wireless network across the US in 2.5Ghz spectrum.

Nextel's initial move is conventional, however, and somewhat behind many rivals. Its Unlimited Wi-Fi HotSpot Plan will be available mainly at airports, hotels, convention centres, retail stores and other locations, plus 150,000 hotel rooms where Wayport's wired Ethernet connections are available. Nextel subscribers will be able to switch into cellular networks when hotspot coverage runs out, using Nextel's Wireless PC Access offering.

The company's im240 PC card creates single click access to either network, though seamless roaming will only be supported in phase two. The hotspot service alone is available for laptops for a monthly fee of $39.99. With Wireless PC Access added, the service is charging a promotional rate of $54.99 per month, which seems highly priced in the US market.

Nextel's move leaves Verizon Wireless as the only national mobile carrier in the US

Public safety hotzone planned for Oregon

The latest US metrozone deployment to hit the news is a public safety network for Washington County, Oregon. Though mooted before, requests for proposals have now been issued with a view to building the network later this year across the whole county.

The primary RFP is for a public safety network for Washington County, whose seat is at Hillsboro, Oregon. The network will be dedicated to emergency services and the RFP states: "It is critical to provide all wireless backhaul locations with redundant network access, best practice power conditioning, and 20-minute battery backup with automatic switchover during power failures. The County desires IEEE standards-based client radio hardware due to its lower cost and higher interoperability, but will also review proposals offering proprietary client equipment. This data network will have both indoor and outdoor implementations."

A secondary network may also be created for commercial use. A demonstration network created earlier this year was based on mesh technology from BelAir Networks, using five base stations along a major highway, and tested by police and emergency vehicles.

with no significant Wi-Fi plans – its co-parent Verizon is closing down payphone based hotspots around New York as being competitive against EV-DO. However, there are question marks over Nextel's Connection Manager software, which appears not to support an 802.1x client, as T-Mobile's more established, and similar, service does. Cingular, the largest wireless carrier, is assembling a national hotspot network under the FreedomLink brand.

UK's community wireless networks mapped

The UK's National Community Broadband Network, an organization to support and promote community-based services, has mapped 550 such deployments in the country, most based on Wi-Fi or other wireless technology.

The listing, available at *www.broadband-uk.coop*, shows that diverse communities, rural and suburban, have networks run by a mixture of social enterprises, small private companies, voluntary groups and public sector organizations, almost all using low cost wireless technology to deliver their services. A combination of cheap Wi-Fi kit, license-exempt radio spectrum and clever networking technology has made this possible, according to Malcolm Corbett, head of the project, and is bringing affordable broadband to many parts of the country more rapidly than the established telcos.

Incumbent British Telecom is looking to use WiMAX to extend broadband to remote areas, but like other commercial WISPs, it will find itself up against tough competition for the consumer market in areas where there is a free, subsidized or community network in place.

Boingo and Fatport in new roaming deals

Boingo has signed two new roaming deals, while Canada's hotspot operator Fatport has signed an alliance with NetNearU to broaden its footprint.

Boingo has confirmed a previously promised deal with in-flight WLAN service Connexion by Boeing, integrating all flights equipped with the service into the Boingo Roaming System, which aggregates hotspots round the world, mainly in business focused locations such as hotels.

To enable users to take full advantage of this expanded service, Boingo is offering a special promotion: New Boingo subscribers can receive a free in-flight Wi-Fi connection (at $29.99 value) when they sign up for a Boingo monthly account with a three-month commitment.

Only a few airlines, such as Lufthansa of Germany and Japan Airlines, have live deployments of Connexion but it will spread to new airlines, and to the first domestic US routes, later this year.

Boingo has also formed a Wi-Fi roaming agreement with Ireland-based Bitbuzz, extending its reach to about 50 hotspots in the country. Boingo now has 7,000 hotspot locations in Europe, in 18 countries, and 17,000 worldwide in its catalog.

Meanwhile, Fatport, Canada's largest hotspot operator, has signed a two-way roaming deal with NetNearU, which provides a hosted hotspot service including all the back office functions.

FatPort manages over 300 locations in Canada mainly in hotels, restaurants and convenience stores. NetNearU has over 130 partner networks operating over 1,000 locations worldwide. Operators that use its hosted service can also join its aggregated network for greater traffic. One of NetNearU's largest partner networks in Canada is BroadbandXpress, which operates over 70 marina hotspots throughout the Puget Sound and Georgia Strait waterways.

"FatPort is particularly pleased to be working with NetNearU as they significantly extend our network coverage worldwide," said FatPort CEO, Claudia NG. "For example, our customers are now able to access marine locations through BroadbandXpress, which was previously a gap in our network coverage."

VENDORS

Colubris-Avaya alliance points to anti-Cisco ecosystem

Colubris has been bolstering its shift from hotspot equipment to the enterprise WLAN with a string of partnerships, the latest being VoIP specialist Avaya.

Colubris kit is now compliance tested with Avaya handsets, through the latters DeveloperConnection program, but many expect further results from the tie-up. Avaya, which is also part of Motorola's enterprise voice over wireless program (see separate item), is working on supporting voice calls over both cellular and Wi-Fi networks, and is said to be cooperating with both Colubris and voice-over-WLAN specialist switchmaker Meru in this regard. Colubris already has a close partnership with backbone maker Juniper Networks, which is also a recent friend of Avaya, working to combine VoIP with Juniper's routers. Colubris and Juniper are working on WLAN security and on hotspot front ends for Juniper carrier products.

With Cisco seeking to boost its own dominance in the enterprise WLAN and VoIP sectors, it seems that a mesh of smaller players are banding together to create an alternative to the giant. With Proxim financially unstable (see separate item), Avaya may be looking for a new switch and access point partner in the important three-way venture with Motorola for an enterprise wireless voice platform.

Trapeze adds Enterasys to partner list

The wireless switchmakers know that the key to survival in their overcrowded market will be strong partnerships, and Trapeze has now added Enterasys to its list of OEMs, which also includes Nortel, D-Link and 3Com.

While the D-Link and 3Com deals cover only part of the Trapeze line and are focused on small and medium enterprises, the latest alliance is back in the start-up's original enterprise heartland.

The raft of OEM deals may be a first step towards what some, less successful switchmakers have already adopted as policy – separating their software from the switch and licensing it, as the hardware becomes increasingly commoditized and even incorporated into Ethernet appliances.

Enterasys was working on its own wireless switches to complement its core enterprise wired LAN range but has now, like many corporate network providers, turned to a third party.

STANDARDS AND REGULATION

Moves towards open standard for WLAN security policy

Pulse Wireless software houses are starting to take interest in the new Trusted Network Connect (TNC) specification, which seeks to set open standards for enforcing policies for end point security.

The TNC, which was announced earlier this month by the non-profit Trusted Computing Group (TCG), aims to help stop the spread of viruses, worms, denial of service attacks and other vulnerabilities in networks. The first WLAN specialist to adopt TNC is Funk Software, also a contributor member to TCG, which will incorporate the new specification into its Radius server and 802.1x client.

If others follow, policy enforcement could become open on WLANs, rather than being only in the hands of proprietary solutions such as those offered by iPass or GoRemote for their enterprise remote access services.

Another likely early adopted will be fellow TCG member and Radius product maker, Meetinghouse Data Communications.

Funk demonstrated its Odyssey client and Steel-Belted Radius server software,

running the new spec, with antivirus specialists Check Point Software and McAfee. The demo used two TNC interfaces, the Integrity Measurement Collector, which is installed in the client software, and the Integrity Measurement Varifier, installed in the Radius server.

The TNC specification is similar to end-to-end security projects such as Cisco's Network Access Control and Microsoft's Network Access Protect. Microsoft is now a promoter member of the TCG, however, so cooperation is possible. Walsh also says that the TCG and Cisco have had "conversations".

Microsoft XP supports WPA2 security

Following up on a promise made earlier this year, Microsoft has announced that Windows XP Service Pack 2 now supports the WPA2 Wi-Fi security standard (the brand name for the new 802.11i specification).

The new update is available as a free download now and makes XP acceptable for wireless use in government agencies and other sensitive environments.

Another advantage to the update is added support for Wireless Provisioning Services Element (WPS IE), which allows WISPs to migrate to more secure Wi-Fi hotspots by enabling support for both secured and unsecured Wi-Fi networks on a single network infrastructure during the migration process.

WPA2 confirms that a PC's wireless software is compatible with IEEE 802.11i, and supports the advanced data encryption mandated by the Federal Information Processing Standard (FIPS) 140-2 specification, by which many government agencies and enterprises must abide.

The update's added support for WPS IE allows ISPs to operate multiple logical wireless networks on a single physical network infrastructure — a market requirement for most providers as they replace unsecured connections at hotspots with security enhanced connections. WPS IE simplifies the network discovery process and enhances the WPS technology, which enables automated and more secure provisioning of wireless clients in public hot spots.

SEMICONDUCTORS

WLAN chipmaker closes its doors

The latest victim of the ongoing shake-out of Wi-Fi start-ups is chipmaker IceFyre Semi-conductor, a Canadian company that was looking to create low power 802.11 chips for consumer electronics and consumer devices.

The company told online news service Unstrung that "we are winding down operations".

IceFyre seems to have fallen victim to a common problem for chip start-ups – one of timing. In its early years, low power chips were not in great demand as Wi-Fi is only now entering the mainstream for handhelds and consumer devices. Now that the market is picking up, though, IceFyre faces competition from larger vendors such as Philips and Broadcom, which have made extremely compact, low power chips and can achieve far better pricing and economies of scale than start-ups.

IceFyre was an innovative company, though, and we would expect a larger chipmaker to acquire some of its intellectual property as handhelds and dual-mode phones look like one of the best growth prospects in Wi-Fi for the year ahead.

METRICS

ABI forecasts over 100m dual-mode handsets by 2010

According to a new study from ABI Research, annual global sales of dual-mode mobile phones supporting cellular and Wi-Fi connections are likely to exceed 100m by 2010.

According to senior analyst Philip Solis, the market will be kick-started when large telcos like BT and Korea Telecom launch dual-mode services later this year.

"The advantages of dual mode handsets and services, when they arrive, can be summed up in two words: seamless and economical," he said.

Though the full spectrum of capabilities won't appear in the first generation of products, when these services are mature you will be able to start a phone call at home, continue it via cellular in the car and end up on the corporate WLAN at work. Through all this, the handset would sense the available signals and switch automatically from one network mode to another – although ABI stresses that this will not be possible with first generation devices.

There are also many question marks over how the operators will price and control their multi-network services, in terms of the real world economics for large companies.

DEALS

Proxim warns of bankruptcy risk

Although Proxim narrowed its losses in its first quarter, it warned that it will be forced to seek bankruptcy protection if it does not find a financial backer during this quarter.

The Wi-Fi and broadband wireless company posted a net loss of $7.8m on sales of $25.4m, narrowing the year-ago Q1 loss of $17.5m on sales of $26.7m.

In January, Proxim hired Bear, Stearns to explore strategic alternatives, following a series of disappointing financial quarters and the delay of some key products. One option would be acquisition and it is reportedly in talks with at least one potential buyer. Proxim's Wi-Fi switch business is under huge pressure from start-up competitors and price reductions, but it has some innovative technologies including its pre-WiMAX gear – the basis of a reference platform created with Intel – and its joint development with Motorola and Avaya of an enterprise voice over WLAN solution (see separate item).

This could put Motorola in the frame as a buyer – the two companies have cooperated before in areas such as public safety and the US giant is already an investor.

Proxim shares lost half their value, falling by 45 cents to 35 cents, on its bankruptcy warning.

The company has an immediate need for additional financing," Proxim said in a statement. Despite the talks with a potential buyer, it stressed "there can be no assurance that a transaction will occur."

Proxim needs to raise about $100m to be entirely debt-free and could probably not achieve this by selling selected assets. Previously, it had been its preferred route to sell the WLAN business and retain broadband wireless but a complete sale of the company now seems more likely.

Wayport acquires NetPoint in Denmark

Wayport has acquired Copenhagen based NetPoint, which provides internet access services to 120 hotels in 24 countries in Europe and the Middle East, complementing Wayport's own core business in hotel access, which is largely Americas-based.

Wayport CEO Dave Vucina commented: "With Wayport's leadership in North America and NetPoint's leadership in Europe and the Middle East, we can provide hotels and other strategic venues a global solution and offer their customers an exceptional internet experience."

The acquisition brings with it more than 120 hotel properties from chains such as Accor/Sofitel, Mercure, Ibis, First, Hilton, Park Inn, Radisson SAS, Remmen, Scandic and Zleep - as well as a number of privately held hotel properties.

The NetPoint team, based in Copenhagen, Denmark, will drive Wayport's planned expansion of operations in Europe.

EVENTS

Conferences

Wi-Fi Voice Conference 2005

May 10-13, Paris, France

Web: http://www.upperside.fr/wifi05/wifivoice2005intro.htm