INCISOR™

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A RADIO AS INDIVIDUAL AS YOU – WI-FI INTERNET RADIO

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words can bite you

In my introduction to last month's issue, I mentioned that there was to be a new industry event taking place at the end of October. The Bluetooth SIG had joined forces with IMS Conferences, to stage an event titled the 'Bluetooth Evolution Conference'.

The two key evolutionary themes were High Speed Bluetooth, and Ultra Low Power Bluetooth – the two key directions the technology is going in. It was the former topic that lead to some controversy, which, if it didn't upset the applecart completely, certainly startled the donkey. If you want to know what happened, you need to read the story on page 9.

But what was remarkable was how a remark made by a speaker at a relatively small conference could have such a wide-spreading ripple effect, and just how quickly. Courtesy of a few statements, a previously stable technology road-map was suddenly being questioned. Hasty meetings were being called, strategies being questioned, and products being re-considered. Even now, approaching a week later, companies and individuals are still meeting behind doors and/or issuing official policy statements.

PR – whether is it press or public relations – needs to be carefully thought out. Some do it well, some do it badly, some don't do it at all, for a variety of reasons. While much time, effort and money can be expended on PR to little or no visible effect, it is amazing how much impact a simple statement can have.

Other than that excitement, the conference went well, and we would be surprised if it didn't get repeated.

Vince Holton
Publisher & editor-in-chief, Incisor

INCISOR SALES TEAM GROWS

The team of people now handling Incisor's sponsorship, advertising and e-marketing has now grown to include Ian Harbar and Mat Ananin, and our team is now headed by Martin Clarke. For all sales enquiries, please email:

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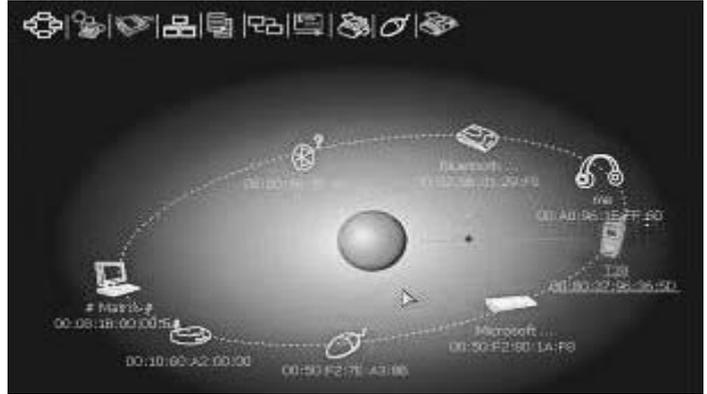
IMS/B-SIG London conference a hit

Delegate numbers weren't huge, and there wasn't a large exhibition element attached, but it is probably safe to assume that both the key organisers – IMS Conferences and the Bluetooth SIG – were reasonably happy with the way their two and a half day London event panned out.

Since the demise of Bluetooth World Congress, and Wireless Connectivity World, there hasn't been a large scale conference/exhibition for the WPAN industry. There have been rumours that the Bluetooth SIG has considered re-inventing the Bluetooth Developers Conference, which, in its time, was a hugely successful event. But maybe there isn't quite the need for such an event today, as the SIG's UnPlug Fests have more or less assumed the mantle of an event where engineers can get together and do the Planet Earth version of a Vulcan mind-meld.

However, there are still people in the industry that would like there to be a well-organised and attended annual event at which they could show their wares and do all of the networking that makes the world go around. It probably comes down to the fact that it's the easiest way to get a lot of potential sellers and buyers all in the same place at the same time. A tech-spook-souk, if you will.

The Bluetooth Evolution Conference achieved the basic requirements of bringing together a reasonable – for a new event – number of people, created an agenda that addressed the current hottest topics – High Speed Bluetooth and Ultra Low Power Bluetooth, and was based in a location that people can get to – London, England.

What could have been done better? Well, a bit more variety in the content, perhaps. A whole day was allocated to each of the key themes, and you have to be really good at building an agenda that spends a whole day talking about High Speed Bluetooth or ULP Bluetooth and still retains the audience's attention. And there were one or two venue-related issues – temperatures in the main auditorium were either freezing or sweltering – and despite IMS, SIG and various other participants asking, the tech-bod supplied by the hotel seemed unable to grasp the concept of reliably audible PA-system levels. Perhaps at other times he works in housekeeping.

These factors notwithstanding, this felt like an event that had worked. Both IMS and the SIG expressed that they were satisfied with this first conference that they had staged together, and Incisor understands that talks are already underway regarding future dates and locations.

Small hint, guys – we and lots of other people used to really like going to Bluetooth events in Monaco during the summer months. If you are looking to stage an event that people are going to want to go to and are more willing to put their hands in their pockets for, this might help …..

## IVT Releases BlueSoleil V6.0 Mobile Edition

IVT Corporation, which has a licensed-user installed base of over 22 million users for its BlueSoleil Bluetooth PC software, announced at the Bluetooth Developers Conference in Japan that BlueSoleil V6.0 Mobile Edition has now been released, supporting Microsoft Vista, Win XP, and Win 2000.

In addition to the range of Bluetooth profiles currently supported by BlueSoleil, V6.0 allows users to download their contacts from their mobile phone to a PC/Laptop, edit a contact on the PC/Laptop and upload the new contact to the mobile phone. They can also download SMSs from their mobile phone and send SMSs via their mobile phone from their PC/Laptop, and transfer Files & Images between their phone and PC/Laptop. BlueSoleil Mobile Edition supports One Click Dial Up Networking, allowing a PC/Laptop to connect to the internet via the mobile phone.

According to IVT, all of these features can be handled from a single User Interface without installation of additional phone tool software. Alan Buckley, IVT Executive Technical Director explained to Incisor: "Bluesoleil V6.0 increases the usability for end-users, whom can now take advantage of the larger screen and convenient keyboard of their computer to complete a task on their mobile phone. Mobile operators can also benefit from a One Click Dial-up networking to promote their data service without the additional cost of using a PC card or Dongle."

BlueSoleil V6.0 Mobile edition was developed on top of version 5.0 which supports a dual User Interface: Windows Vista style, embedding the BlueSoleil functionality into Explorer, and Traditional BlueSoleil style showing your Bluetooth-enabled PC/ Laptop presented as a Sun Icon with the peripherals in range presented as icons around the Sun.

IVT has recently licensed BlueSoleil Mobile Edition to Lenovo, for its desktops PC and supplied a customized GUI. Lenovo isn't IVT's only big name client. The company also does business with HP, British Telecom, Motorola, Samsung, LG, Ricoh, Pansonic, Mitac, Wistron and others.

news
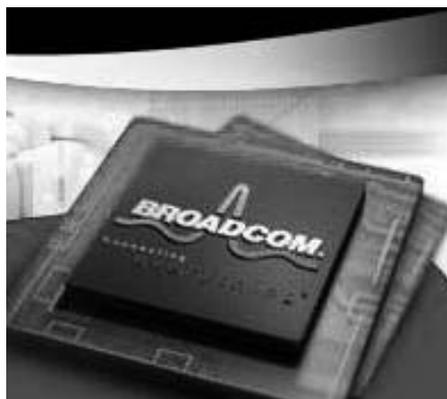
CSR shows Music'n'Voice dongle design

CSR has launched a USB Bluetooth dongle design that will enable stereo or mono Bluetooth headphones to be used with a PC for Voice over IP (VoIP) calls, as well as the wireless streaming of music. The low cost Music'n'Voice (MV) Bluetooth dongle will allow users to switch seamlessly between listening to music and taking a VoIP call.

The example reference design is a single chip solution using CSR's BlueCore3-Multimedia chip with integrated DSP processor and codec. Very few external components are required, enabling CSR to offer the MV Dongle with a very low BOM – leaving open the option for these dongles to be bundled with mobile phones or Bluetooth headsets.

The MV Dongle works with headsets supporting HFP (handsfree) profile and supports the AVRCP (remote control) and A2DP profiles (Advanced Audio Distribution Profile) now found in the Bluetooth implementation of many mobile phones. The CSR DSP in BlueCore3-Multimedia encodes a 48KHz 16-bit stereo audio stream to SBC for transmission over A2DP.

When the MV Dongle is inserted into a PC's USB port, the system will recognise it as a sound card, and it will automatically work with popular media player software such as Apple iTunes, Windows Media Player, RealPlayer or WinAmp, running on Microsoft Windows 2000, XP or Vista. CSR's MV Dongle also supports all major VoIP providers such as MSN, Skype, Google Talk, and Yahoo Talk.

Anthony Murray, Senior Vice President for CSR's Wireless Audio Strategic Business Unit, commented, "Customers are telling us that Bluetooth headsets are growing in popularity and since more devices support the necessary Bluetooth profiles, we could well see CSR-based Music'n'Voice dongles bundled with handsets and Bluetooth headsets, to offer end users a wider application for their Bluetooth headsets."

The MV Dongle design is available now from CSR, including BOM, reference design and software development kit (SDK).

Freescale sales and profits down

Freescale Semiconductor has posted some less than stellar results. Its financial results for the third quarter ended September 28, 2007 have just been made public.

Net sales for the third quarter of 2007 were $1.45 billion, compared to $1.62 billion in the third quarter of 2006.

Before stating it's bottom line numbers, Freescale made a meal out of explaining that operating earnings, net earnings and Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) included non-cash purchase accounting expenses related to the company's acquisition by a private equity consortium in December 2006.

Freescale suggested we consider that providing operating earnings and EBITDA exclusive of these expenses is a more meaningful representation of the company's ongoing financial performance. Including the aforementioned expenses, the operating and net losses for the third quarter of 2007 were $202 million and $261 million, respectively.

Excluding the aforementioned expenses, operating earnings were $195 million and EBITDA was $353 million. This compares to operating earnings of $270 million and EBITDA of $435 million in the third quarter of 2006.

However you look at them, and no matter how Freescale tries to paint the picture, we can't imagine that year-end bonus discussions are going too well in Austin.

Sales flat-ish, profits down for Broadcom

Broadcom Corporation has reported unaudited financial results for its third quarter ended September 30, 2007.

Net revenue for the third quarter of 2007 was $950.0 million, an increase of 5.8% compared with the $897.9 million reported for the second quarter of 2007 and an increase of 5.2% compared with the $902.6 million reported for the third quarter of 2006. Net income computed in accordance with U.S. generally accepted accounting principles (GAAP) for the third quarter of 2007 was $27.8 million, or $.05 per share (diluted), compared with GAAP net income of $34.3 million, or $.06 per share (diluted), for the second quarter of 2007, and GAAP net income of $110.2 million, or $.19 per share (diluted), for the third quarter of 2006.

Net revenue for the nine months ended September 30, 2007 was $2.749 billion, an increase of 0.2% compared with the $2.744 billion reported for the nine months ended September 30, 2006. Net income computed in accordance with GAAP for the nine months ended September 30, 2007 was $123.0 million, or $.21 per share (diluted), compared with GAAP net income of $334.0 million, or $.57 per share (diluted), for the nine months ended September 30, 2006.

news

Bluetooth-enabled equipment shipments to hit 800 million this year

IMS Research has recently published the eighth edition of its annual Bluetooth technology report. In this new report, IMS continues to forecast healthy growth, though suggests that caution should be exercised over the ultimate attach rates of Bluetooth technology in the total cellular handset market. As cellular handsets become more prevalent in less affluent markets, IMS believes that there is a growing demand for low-cost handsets that have only basic functionality. In this particular segment, it is probable that many handsets will not be enabled by Bluetooth technology, and hence the ultimate attach rate of 90% of all handsets globally, which suppliers initially anticipated, is unlikely to be attained.

Despite this, IMS observes that the Bluetooth wireless market has had another astounding year; worldwide Bluetooth-enabled end-equipment shipments are forecast to increase by over 40% from 2006 to 2007, to around 800 million units. Fiona Thomson, Senior Market Research Analyst with IMS Research commented, "This mainstream technology has continued to grab the headlines, despite other technologies such as GPS and WiMAX demanding the attention of the wireless industry. With announcements such as an ultra low power version, Bluetooth technology is set to expand its reach and remain at the forefront of manufacturers minds."

The annual number of Bluetooth-enabled cellular handsets shipped is anticipated to surpass the 500 million unit mark for the first time ever in 2007. Meanwhile, the market for mono headsets continues to thrive, and the market for stereo headsets, although it experienced a couple of false starts, is starting to show promise. The worldwide figures are still low for stereo headsets for a number of reasons including consumer acceptance, stereo headset design/price, and the fact that the other end of the equation (i.e. Bluetooth-enabled personal media players and A2DP-enabled phones) are yet to make a real impact on the market. Once the three of these happen, and IMS Research believes they will over the next 12 - 18 months, then it expects the stereo headset market to really take off. There is likely to be a big push at the end of 2007 and in 2008 but "considerable" worldwide volume won't be reached until 2009 and beyond.

After cellular handsets, the second largest application has historically been Bluetooth headsets. However, in 2007, gaming equipment has become the second largest application in terms of units shipped, with the Playstation 3, Xbox 360 and the Nintendo Wii all including Bluetooth (and Wi-Fi).

GN invites consumers to design

With its new Jabra BT3010, GN is allowing customers to get involved in the design process. This Bluetooth headset comes with a choice of interchangeable covers and the option to create your own, so that anyone can completely customise their look.

GN invited people to develop their own covers and submit them into an international design competition. Eight winners have been chosen and their designs will be included with the final product, with their names featured on the packaging.

Anyone else wanting a go just needs to visit www.jabra.com/coverdesigner where you can get creative and develop your own masterpiece – just create, print and cut out. This are already 33 designs in the box, and so the possibilities to update your look and customise your style are pretty broad.

GN claims that the latest Bluetooth technology gives clear sound and no interference. Simple pairing to other devices is featured, plus 8 hours talk time and 300 hours standby time.

Winning designs for the BT3010 came from across the world, with designers from Australia, USA, Turkey, Italy, France, Japan and Honduras. The winners took their inspiration from diverse sources to develop their designs. 'Thumb Sized Jabra' was designed by Michael Damphousse from Andover, MA, USA. He says of his design, "the thumb print made sense since the earpiece was the size of a thumb". Juanco Viso from Milan, Italy designed 'Echoes' and drew his inspiration from "the ungraspable magic of technology", while the "coexistence of regular pattern and irregular pattern" led to the creation of "Roof', designed by Tetsuya TakoriTa from Saga, Japan.

It seems that as the Bluetooth headset market gets more and more congested, you have to come up with whacky ideas to sell them these days.

news

Freescale puts up $50k for "green" designers

Here at Incisor we're reluctant to jump on the green bandwagon, but with everyone out there doing so it's hard to avoid providing some coverage. So here we go. Responding to what it says is increasing customer demand for energy efficient and green products, Freescale Semiconductor is kicking off a green design challenge that encourages designing for the environment.

Freescale is inviting embedded engineers and engineering students to participate in its first worldwide FTF Design Challenge to help make the world a greener place. Participants will create green electronic designs using a select group of solutions from Freescale's product portfolio.

Earlier this year, the Freescale Black Widow Design Challenge invited engineers in the United States, Canada and Mexico to create the most inventive design. The top three designs used Freescale semiconductor technology to create a myoelectric hand prosthesis; an "Etch-a-Sketch" toy that enabled sketches to be saved, retrieved and recreated electronically on the tablet; and a therapeutic massager.

Freescale is now opening this competition worldwide, hosting Design Challenges in the Americas, Israel, Japan, Europe, India and China. All entries for the Americas FTF Design Challenge must be submitted online by January 2008. The first place winner will receive $10,000 USD, second place $5,000 and third place $2,000.

In addition, regional first place winners will be invited to participate in the Grand FTF Design Challenge, competing against first place winners from FTF Design Challenges in the Americas, and other regions such as Israel, Japan, Europe, China and India for

$50,000 and a ticket to the FTF 2009 of his or her choice. Whoo-hoo!

Based on Freescale's recent results, getting non-Freescale staff to create new designs in the hope of winning a cash prize, seems like a great idea, and very cost-efficient.

'Wonder who owns the designs, at the end of the day .... ?

Sat Nav + Bluetooth – the way to go

Juniper Research estimates that the there are nearly 34 million users of portable navigation solutions of all types in Western Europe. The vast majority of these are using personal navigation devices (PNDs). By the end of 2012, Jupiter expects that this user base will have increased more than 3 fold, but only half of these will be PND users, ther rest will be using on-board, off-board, or hybrid solutions on multi-purpose devices.

Connectivity, and particularly wireless connectivity are widely considered to be the way forward for navigation and tracking solutions. Few PNDs have integrated wireless connectivity today, but an increasing number offer Bluetooth so that devices – particularly mobile phones – can enable handsfree calling and over-the-air (OTA) updates of dynamic data such as traffic information and alerts relating to everyone's best friend – the speed camera.

The total value of the portable navigation solutions market in Western Europe is estimated to be just under 4.3 billion in 2007, and growing to just under 8.4 billion by 2007, despite fierce price erosion.

Jupiter believes that at the moment, PNDs are must have consumer electronics devices and that the leading brands are

acquiring the same sort of brand recognition within the sector as the iPod and Walkman brands within the portable music sector. It cautions, though, that by 2012 the PND will have lost some of its dominance in the personal navigation sector.

Low cost ref design for laser mice

Broadcom Corporation and Avago Technologies have developed a new low cost reference design platform for building laser mice based on Bluetooth. The new reference design combines Broadcom's Bluetooth silicon and software with Avago's LaserStream mouse sensor technology.

The two companies are promising that the reference design will enable manufacturers to build full-featured Bluetooth laser mice at a cost that is substantially less than the cost of existing solutions, with one-click pairing and over six months of battery life.

The joint announcement from the two companies states that Bluetooth laser mice are increasingly popular because they provide more precise tracking over a variety of surfaces without the hassle of cords or cables. What isn't mentioned is that an awful lot of the wireless mice out there are still using proprietary wireless technologies, which are typically cheaper to integrate than Bluetooth. As Bluetooth volumes grow, and silicon prices continue to fall, this situation could change.

The Bluetooth laser mouse reference design includes a new navigation platform developed by Avago, and offers optical sensors that incorporate Avago's LaserStream technology and Broadcom Bluetooth technology.

The Bluetooth Laser Mouse reference design is available immediately.

new products

Sony Ericsson rolls out new speaker

Sony Ericsson seems keen to show us that it can think outside the box. It has introduced a new portable Bluetooth speaker called the MBS-100 which foregoes conventional thinking and design for this type of product (designs for iPod docking stations are, by and large, pretty samey, and there are so many of the blessed things), and comes shaped like a ball. It is A2DP (stereo Bluetooth profile) –enabled, and so is aimed at Sony's Walkman branded phones and other MP3 player-equipped phones/players.

Inevitably, there was some gushing, semi-intellectual prose in Sony Ericsson's press release. Jacob Sten, Head of PBU Accessories at Sony Ericsson put his name to some of it: "The Portable Bluetooth Speaker MBS-100 is completely unique to the market. The quality of the sound, the design and the convenience of taking it wherever you want, makes this the perfect complement to your Walkman phones. You can listen to your favourite songs wherever you go, all you need is your phone and your MBS-100. The sound experience, coupled with the striking design makes this a must-have music accessory."

The MBS-100 comes with an integrated rechargeable battery, offering up to five hours playtime on a single charge, and will be available from Q4 2007 in selected markets.

... and Car Handsfree HCB-105

In addition to the MBS-100 speaker, Sony Ericsson also announced the Bluetooth Car Handsfree HCB-105. This is described as pocket-sized in-car solution requiring no installation.

In common with most such devices, the Bluetooth Car Handsfree HCB-105 attaches to your car visor via a clip and can be controlled using two buttons to power on or off, answer or end calls and adjust volume.

Incisor saw this product at a recent Bluetooth SIG event and we would have to say that it is a pretty stylish, desirable piece of kit. Whether it performs better than other similar devices will have to wait until we test one.

Battery stats look pretty good: a talk time of up to 25 hours and a standby time of up to 700 hours are claimed. The HCB-105 will be available in selected markets from Q1 2008.

Mini review Motorola T305 Portable Bluetooth car kit

This Motorola product has now been used by a number of Incisor's staff and gets a general thumb-up. It is one of those simple to use, reliable items that you tend not to think about – you just get on with using them.

Like most such devices it clips onto the sun visor with its microphone aimed at the driver's head. The traditional blue flashing light lets you know it is operating, and there is a single button on the leading edge that allows you to accept and end calls. Volume 'up' and 'down' buttons are easily found on opposite sides of the speakerphone.

Sound quality is good, as the T305 is equipped with echo and noise reduction technology and a 1-watt speakerphone. Motorola's publicity materials state that you are able to experience easy-to-use, hand-

free and clear conversations even in the noisiest environment. Hmmm …. This is our only beef. On more than a discountable number of occasions, people on the other end of calls we had made using the T305 complained that they couldn't hear us well, and if we're honest, we had occasions when we would have liked a bit more volume. But we shouldn't complain too much, and it didn't stop a number of us using it, swapping between cars and enjoying the portability of the design. This portability factor meant that if you're in the middle of a call when you reach your destination, and want to stay hands free, you can just take the T305 with you.

The T305 also has voice dialling, and as it uses Bluetooth version 2.0, you get a speedy connection to compatible Bluetooth enabled devices, the afore-mentioned decent audio, fewer dropped calls and reduced interference from other wireless devices.

We think Motorola's claims of up to 14 hours of talk time and 14 days of standby time are on the mark. Keep the in-car mini-USB phone charger with you and the Motorola T305 is easy to keep charged.

To sum up, before you take any notice of our comments regarding sound quality and volume levels, remember that the T305 retails for around £30-35 in the UK. That's not a lot to pay for a quality brand product that proves itself to be very handy to have around and keeps you on the right side of the law.

Bluetooth + UWB?
Or Bluetooth + Wi-Fi?
Wireless community has a fit of the wobbles

The established Bluetooth roadmap received a shake-up at the IMS 'Bluetooth Evolution' conference that took place in London, 31st October - 2nd of November. In a keynote speech titled 'Turning Ideas into Marketable Products' on the first day of the event, John Barr, who is Director, Standards Realisation at Motorola, and – crucially - also Chairman of the Bluetooth SIG Board of Directors, told the audience that Motorola was turning its attention to Wi-Fi as the preferred option for Bluetooth's high-speed data channel.

As Incisor readers will know, the SIG announced its allegiance with the WiMedia Alliance's UWB platform during March 2006, publicly stating that UWB was the chosen path for the SIG's high speed solution. Recently, though, there has been some disquiet over staying with that policy. Albeit that some progress has been made, it is true to say that UWB solutions have not hit the market when expected, which has caused problems for the cellular handset manufacturers. They have been looking to add high data rate capability to phones whose technology platforms/specs are currently crystallising on CAD systems around the world.

However, best current estimates suggest that it will still be 2 years before an UWB-based High Speed Bluetooth-enabled handset would be ready to ship. In a recent informal chat, an exec of one of the leading UWB companies told Incisor that 12 months ago, not even the most pessimistic in the WiMedia Alliance companies thought that it would take so long to deliver solutions to customers.

Both Sony Ericsson and Nokia were represented at this conference, and lent tacit support to Barr's position, which had very obviously been made with his Motorola hat on. Other Bluetooth SIG executives, several of whom were in attendance as a result of the SIG's Platinum sponsor investment in this event, put on a brave face. Marketing

Director Anders Edlund steadied the ship by pointing out that the structure of the Special Interest Group is that of a co-operating group of individual companies that have worked together to further Bluetooth's interests. He reflected that it would be folly to attempt to control the development process of member companies and would be counter to the general spirit of creative advancement. Beyond this, Edlund pointed out that this wasn't really the major news item that it was being made out to be, as the SIG has an ongoing working relationship with the Wi-Fi Alliance and its member companies, and was pro-actively investigating the use of Wi-Fi in High Speed Bluetooth scenarios (as reported by Incisor in last month's issue – see p3, **'Bluetooth SIG considers 802.11 as an Alternate MAC/PHY'**, Incisor issue 114).

As this article was being written, it was only a very short time after the conference audience heard John Barr's speech. There hasn't been time for a full-on response from the Bluetooth SIG, and doubtless there are one or two (possibly tense) meetings going on at the moment. But, SIG executive director Mike Foley did move to make an early statement in his blog on the www.bluetooth.com site. This is public domain, so we're pretty sure that Mike won't mind us reproducing what he said here.

Mike's November 1st blog, under the title Bluetooth Technology High Speed Solutions said:

Recently there have been some stories published by media regarding the roadmap for Bluetooth wireless technology that have generated questions. I'd like to take this opportunity to answer those questions publicly. In 2008 the Bluetooth SIG intends to release a new specification to enable high-speed applications. Architecturally this will be accomplished by a feature we call the Generic Alternate MAC/PHY or

AMP for short. This feature defines how different transports can be utilized by the Bluetooth profiles. As the name implies, this is a generic feature for which any MAC/PHY can be plugged into the system. This allows existing as well as future MAC/PHY to be easily integrated into Bluetooth technology.

However, the AMP alone is not enough to enable high-speed applications. There must also be specific technologies under the AMP. Currently work is underway in the Bluetooth SIG to define how UWB and 802.11, two independent MAC/PHYs, can be plugged into the AMP and utilized as high-speed channels. The current plan is to release specifications for both of these technologies along with the AMP in the Seattle core release late next year. (Members of the Bluetooth SIG can see the entire roadmap for the technology on the Bluetooth.org web site.) Of course, industry and market conditions are continually being monitored and analyzed. As with all features on the roadmap for Bluetooth technology, they are subject to change reflecting this analysis.

In other words, the SIG is doing the sensible thing and investigating all options, and providing a roadmap that allows its members to go with solutions that best suit their own needs and timescales. UWB and 802.11 will both be catered for in the Seattle release, which puts SIG members in a pretty strong position.

Other organisations inevitably are commenting too. At the London Conference, Mark Moore, CTO of UWB company Artimi said "There will be UWB handsets in Asia, within the next six months". This is true, though they are using the Wireless USB flavour of UWB. Jason Ellis, director of business development & marketing at Staccato Communications, which is undoubtedly one of the leading UWB companies

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with the first single-chip 110nm CMOS WiMedia Certified products and 2nd generation 65nm single-chip CMOS solutions, told Incisor: "Staccato remains very optimistic about the future of Ultra Wideband wireless communications as an addition to ongoing designs in the PC and CE space. We have numerous projects for mobile phones/devices, be it for Wireless USB, Bluetooth 3.0 and/or Mobile Wireless Video. Staccato announced more than a year ago a partnership and collaboration with SK Telecom, the large South Korean carrier known for launching new wireless technologies and services, and is on schedule to enable UWB-based services in Korea in 2008."

CSR had several staff at the conference, including Bluetooth event regular Robin Heydon, who is involved in global standards in the office of the CTO at CSR. At the event, Heydon commented that it was "actually good to work on two alternative transports at the same time". CSR's VP of UWB Marketing, Gillian Ewers, has followed up since by adding: "CSR believes that Wi-Fi and UWB are complementary technologies, Wi-Fi delivering long range and UWB very high throughput. Both technologies hold significant advantages dependent on their end use and as such, CSR fully supports both. UWB is a technically challenging specification to implement, even more so at the higher frequencies required by the Bluetooth SIG, and not all companies will succeed in producing chips that are attractive to the handheld, battery powered market. Nevertheless, the market demand is growing exponentially for high speed data transfer, such as mobile video content sharing, and as experts in designing and manufacturing highly integrated, low power CMOS radios, we are perfectly placed to meet that demand."

Outside of the boardrooms of the Bluetooth SIG, the WiMedia Alliance and presumably the Wi-Fi Alliance, Motorola, Nokia, Sony Ericsson etc, the dust is settling. Where do things stand now? Well, it's never going to be possible, or even desirable, for an organisation like the Bluetooth SIG to open the kimono completely on its long-term strategy. Despite the fact that people constantly demand that it does so.

Incisor's analysis is that nothing has really changed here. The handset manufacturers operate in an ultra-competitive and occasionally cut-throat world. They need to live on the edge and provide the latest widgets, gadgets and technologies to encourage their customers to throw away their only recently acquired, state of the art handset and get a new one. Bodies such as the SIG need to make sure they have all of the bases covered in terms of providing a technology – from concept through development, execution, manufacture and into the hands of customers – that provides a robust structure to work with, makes everything hang together and that looks far enough ahead to not be hobbled or caught short.

Both of these bubbles of reality are in place. All that happened in London this week was another example of the classic industry pratfall – a communications cock-up. The Bluetooth SIG is doing what it needs to do, and Motorola is pursuing a sensible and intelligent strategy. From the outside looking on, you could say that one or two people might possibly have thought a little more carefully about how this was being presented to the world.

It's not the first time this has happened, and it won't be the last.

Life goes on.

Snippets

CSR works for China-wide deployment of location technology

CSR has announced that Yingda, a China-based company focused on the deployment of location and tracking services, is deploying a nationwide network using CSR's software-based location technology. Using a GSM/W-CDMA network, the Yingda solution built on CSR technology has been trialled over the last 24 months and is now certified and approved for deployment on China's operators' mobile networks. CSR's patented eGPS (enhanced GPS) software based location technology benefits from a very short TTFF (time to first fix), enhanced

tracking and location accuracy that works deep indoors.

Wireless data boosts revenues

CTIA -the Wireless Association has announced that wireless data service revenues for the first half of 2007 rose to $10.5 billion. This represents a 63% increase over the first half of 2006, when data revenues were $6.5 billion. Wireless data revenues now amount to 15.5% of all wireless service revenues, and represent money that consumers spend on non-voice services.

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Wireless USB special - Wireless USB in use

Wireless USB Special - Regulatory, approvals and interoperability

Wireless USB special - The future for Wireless USB and UWB

Wireless USB special - Wireless USB at CES 2007

Vince Holton introduces the High Speed Bluetooth Special Issue

Anders Edlund of the Bluetooth SIG - Bluetooth and UWB combined

Robin Heydon, CSR - Bluetooth & UWB - The semiconductor company perspective

Motorola's Steve Deutscher examines High Speed Bluetooth mobile concepts

Motorola video - Jordan's morning

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A radio as individual as you

by Ronen Kenig, CSR

CSR's 2-chip internet radio design can be implemented in a very small form factor, as this demonstration hardware shows (it measures 5x5 cm and that's with just a single-sided PCB). Tools allow users to customise the user interface, and hardware elements such as the user interface.

Wireless standards are creating some exceptional new product opportunities. One that appears to have crept up is internet radio. A lot of us have been listening to it for years via a PC. But, now that broadband connections are becoming prevalent, a new opportunity is presenting itself: portable, Wi-Fi connected, radios.

Internet radio gives us the opportunity to listen in a highly personal way. With a station selection that's numbered in thousands, you can find the exact content you want — whether it's your hometown radio, or some subtle flavour of music such as Flamenco.

How big is this opportunity? Well, media audience researcher Bridge Ratings estimates that by the end of 2007, some one in three of the USA's population will listen monthly to internet radio. There are already around a third of a billion broadband connections worldwide and this is growing very rapidly. It's clear that the potential market for a low cost portable internet radio could be numbered in many millions in the short term, with a continuing and growing market as broadband connectivity increases worldwide.

What's required to exploit this opportunity? Well, Wi-Fi chipsets have been around for a number of years — but you just have to look at how they have been used to date to see the

problem. By and large, the internet radio product market today is made up of 'kitchen radios' and 'hi-fi add-ons' that cost up to a few hundred dollars and are often mains powered. What the industry needs is a solution that has a BOM and power consumption that is optimised for portable applications.

Small eBOM

CSR has developed a new solution for creating Wi-Fi internet radio products. With a 2-chip eBOM, a tiny form factor and amazingly low power consumption, the 'RadioPro' design makes portable battery-powered radios possible. It also changes the economics of building table-top products, or of adding internet radio capability onto existing product categories such as MP3 players, DAB/FM/satellite radios, hi-fi systems, etc.

RadioPro uses just two major ICs: UniFi-1 — an 802.11 b/g device targeted at the portable embedded systems market — and a multimedia applications processor called MAP that combines DSP and RISC cores with a high-quality codec. Combined with Flash and SRAM, the entire eBOM cost for this radio core is just $15 in high volume. All developers need to add is an LCD and user interface components.

CSR's own example hardware for this application (see photo) shows that the radio can be built on a single-sided PCB measuring just 5x5 cm — making it ideal for small personal or wearable products. This demonstration of the design employs four user interface buttons ('select', 'back', and rotary encoders for menu and volume).

Smaller power consumption

A RadioPro personal radio has an active operation life of 25 hours from a 1500 mAh battery. The secret behind RadioPro's incredible lifetime is the unique power conservation features that have been built into the Wi-Fi chip: UniFi-1. Right from the very start of the design of this device, the architecture has been optimised for use in battery powered ➔

With broadband access points increasing exponentially, Wi-Fi internet radio — and especially portable versions — is a major product opportunity.

applications, with separate power domains and control features that ensure that the chip, or parts of the chip required for operations, only remain active for the minimum time necessary.

Quicker to market

RadioPro includes all the required hardware and software components to bring wireless internet radios to market quickly. The example design includes comprehensive software, from the hardware drivers, through the streaming protocols and CODECs, to the user interface. A comprehensive development kit allows customers to modify the user interface and other components in order to differentiate their products. The hardware package includes schematics, Gerber files, bill of materials, and documentation.

Special attention has been paid to the user interface, to make the radio simple to use. Features include a Wi-Fi wizard that takes a user through the entire process of connecting to a wireless network, and compatibility with the new 'Wi-Fi Protected Setup' standard (which links to a secured access point with two button pushes). There is also a ready-built link to the vTuner internet radio portal that makes station selection simple.

RadioPro provides a platform to design better internet radios for a fraction of the price of existing products, for what is undoubtedly a vibrant market. A built-in field-upgradeable software mechanism also gives OEMs and ODMs a powerful platform to ensure long time-in-market. CSR believes RadioPro provides the first practical solution for portable internet radios, assuring users of a quality experience.

Ronen Kenig is a Product Marketing Manager with CSR's Consumer Strategic Business Unit.

sponsored contribution

Snippets

North America leads mobile data market

Whilst the CTIA reports that wireless data services are up, researchers at Informa tell us that subscribers in North America generate the highest monthly ARPU from mobile data services worldwide, at US$8.90 in 2Q07, according to the September 2007 edition of Informa's Telecoms & Media's World Cellular Data Metrics (WCDM). Subscribers in Western Europe generate on average only US$7 per month.

Strong uptake of 'all-you-can-eat' data packages, a near three-fold increase in 3G subscriptions year-on-year and rapid growth in SMS traffic in North America were the main reasons for the 43% rise in data ARPU in the region in 2Q07 compared with 2Q06.

Nokia leads charts – sells 112 million handsets in Q3

Nokia says it sold more handsets during the third quarter than the combined sales of its three biggest rivals. "Nokia's phone business is a well-oiled machine. It is clearly exploiting its leadership in supply chain, manufacturing, distribution and brand," said Ben Wood, head of research at CCS.

Wireless and acquisitions boost AT&T profits

AT&T's third-quarter profit rose 41% to $3.06 billion while sales nearly doubled to $30.1 billion. Revenue from new wireless customers, handset sales and recent acquisitions helped drive the results. The carrier attracted 2 million new wireless customers during the period to bring its subscriber base to 65.7 million.

AT4 wireless qualifies first Bluetooth® v2.1 + EDR module assessed by a BQE

AT4 wireless continues to lead the market for Bluetooth® testing by providing its wide ranging expertise and qualifies the first Bluetooth v2.1 + EDR (Enhanced Data rate) module, assessed by a BQE, STMicroelectronics' latest Bluetooth and FM tuner combo integrated circuit (IC), which is fully optimized for mobile applications such as mobile phones, smart phones, PDAs and portable media players.

Ever since the *Bluetooth* v2.1 + EDR specifications were published, the race to win the first qualification started. *Bluetooth* v2.1 + EDR, the recently adopted Core Specification, enables a simplified pairing process that eliminates the need for a PIN code while at the same time strengthening security. It also consumes less power through an enhancement called Sniff Subrating which results in three to five times the battery life in peripherals like mice and keyboards.

"We are very proud of being the first BQE in bringing the *Bluetooth* v2.1 + EDR module to qualification. The achievement is a result of a long collaboration between both companies, AT4 wireless and ST Microelectronics, that ensures the availability of a robust product ready for integration just after the specifications were adopted."

said Natividad Caro, *Bluetooth* Qualification Expert at AT4 wireless. "*Bluetooth* product developers are generally under a number of constraints when they want to deliver products to the market. An important one is time to market. The long experience and wide testing capabilities of AT4 wireless will enable developers to reduce their time to market and launch their products much earlier."

"This new combo IC adds to our portfolio of leading-edge *Bluetooth* connectivity devices, which has gained significant penetration in the handset business, including many design wins with world-leading mobile phone manufacturers," said Marc Pauwels at STMicroelectronics. "Thanks to AT4 wireless' advanced testing capabilities, we can now bring this new fully *Bluetooth* 2.1 + EDR qualified product quickly to market."

**Natividad Caro
ncaro@at4wireless.com**

About AT4 wireless

AT4 wireless is a global supplier of Testing Solutions for wired and wireless technologies (GSM/GPRS, EDGE, W-CDMA, HSDPA; WiMAX™, *Bluetooth*®, Wi-Fi®, RFID, DECT and PSTN). It services portfolio ranges from conformance, regulatory and interoperability testing services to test systems development, world-wide compliance services, training and consulting.

AT4 wireless was founded in 1991 and has more than 300 employees, 80 percent of whom are engineers.

The company has three divisions: AT4 Labs which is an independent test lab for wireless telecommunications technologies and products. AT4 Systems develops conformance and interoperability test systems for various wireless technologies including WiMAX™. AT4 Engineering and Solutions develops software applications and offers professional services to telecom network operators.

AT4 wireless announced in June their first North American based WiMAX certification Lab.

For more information, please visit:
www.at4wireless.com

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The UnPlugFest: a strong pillar with a low profile of the Bluetooth Special Interest Group

by Anders Edlund, EMEA Marketing Director Bluetooth SIG

How can one of the cornerstones of a member organization be such a noble stranger to many? From the very early days of Bluetooth wireless technology, the UnPlugFests have been an inextricable part of the programme of the Bluetooth SIG. UnPlugFests are non-profit interoperability testing events run by the Bluetooth SIG for the benefit of the members, now more than 9000 in total. The prime objective of the UnPlugFest is to improve the interoperability of all Bluetooth devices being developed and released into the marketplace, but over the years, the event has proven to be much more than just that.

A Multi-tasking Event

Each year, the SIG holds three UnPlugFests – one per region (US, APAC and EMEA) – to provide engineers from all member companies the chance to participate in the testing. The UnPlugFest in Brussels in October was the 28th iteration, and a lot has changed since UnPlugFest 1 was organized 1999 in Nice, France, with 12 Bluetooth prototypes tested by 44 participants. In Brussels, there were 265 engineers testing 146 platforms and prototypes. Over the years, many participants have become a tight group of Bluetooth enthusiasts, with more and more companies joining each time. Gradually, the scope of the event widened too, for example by bringing in testing experts to provide a broader offering and by involving robustness and security experts to start objective, unbiased but meaty discussions about potential security issues, verify protocol robustness and new features added to the technology.

In spite of the fact that hundreds of engineers from all over the world participate in these unique testing events, UnPlugFests have always been a closed activity, providing a safe haven for developers. Respecting the overall confidentiality is an important aspect of the event, which is why each UnPlugFest is run as an event behind closed doors in a neutral location with no publicity.

"When going to the event everyone signs up to the participation rules, being well aware of the common goal. Participants typically are so busy that they have no time to catch glimpses of new design or functionality", says Magnus Sommansson, Global Standards Test & Certification consultant at chip designer CSR and previously long-time manager of the UnPlugFest for the SIG. "There is a strong code of conduct among participants and a rigorous schedule to follow. It all happens very respectful and dedicated, as there is so much to test in just one week."

Feeding the Complete Value Chain

The UnPlugFest is the territory of the technical brains of the SIG and engineers of member companies that want to put their prototype or product to the best of tests. Testing is not aimed at determining if a device meets SIG Qualification requirements. UnPlugFests are designed to allow teams of engineers working on the development of Bluetooth products to verify the interoperability of their devices with engineers from a different company.

Companies recognize the unique opportunity to test products that are not yet on the market against the largest collection of Bluetooth implementations. Moreover, they can interact with engineers from other companies and learn about the latest technological advancements. "Down the value chain, improved interoperability means a better product in the marketplace, an increased consumer appreciation and a lot less customer care calls," says Kevin Keating,

Sr. Marketing Manager of the Bluetooth SIG. "Due to these factors, companies can considerably save costs by bringing their products to an UnPlugFest."

On the Menu

The fundamental set of testing at an UnPlugFest revolves around the three Base Test Categories:

- Category-1 tests focus on the lower (closest to the hardware) parts of the Bluetooth implementation. It is generally the part of the protocol stack below the HCI interface. This includes the Radio (RF) and Baseband (BB) and Link Manager (LMP) layers. Testing may include verification of Forward error correction, Whitening, Adaptive Frequency Hopping, Improved Pairing and other features related to establishing an ACL connection.

- Category-2 tests are related to the portion of the stack above HCI. This includes middle layer protocols such as SDP, RFCOMM, TCS, BNEP, AVDTP and AVCTP.

- Category-3 tests check the application profiles that characterize the functionality to which end users are exposed. This type of testing also tends to verify end_to_end user experiences. As a result, implementers who wish to test Category_3 implementations are encouraged to think not only about the interoperability of the Bluetooth solutions, but also to consider the end_user experience that is being offered by their implementation.

In addition to the above mentioned base categories, other sessions originated as well to offer the most comprehensive testing experience possible. The continuous improvement and expansion of the programme makes the UnPlugFest the invisible driving force behind

the SIG, the technology and its success on the market.

- The Profile Tuning Suite is an automated test system whereby the PTS serves as a reference test system utilized to ensure Bluetooth interoperability. It is based on a Black Box test strategy; a technique whereby the internal workings of the Implementation Under Test are unknown by the tester. This technique has the advantage that the test is unbiased because the designer and the tester are independent of each other.

- To encourage the UnPlugFest platforms to test with a broad range of consumer products (both prototypes and market products), the Device Library Test sessions were created. These sessions allow testing with products that are no longer on sale or not available on the local market.

- Robustness test sessions allow participating companies to verify their implementations' ability to withstand scenarios like buffer overflow, malformed strings and other invalid behaviour. This will considerably reduce the risk of device crashes and security weaknesses.

- Bluetooth Core Conformance Test Case Validation Sessions: Test cases defined by Core Bluetooth Specifications are implemented in a test system. Before these tests may be used as references in the Qualification program, validation must occur. To accelerate this effort, member companies are allowed to make use of this testing as it will help improving their products and will also help validate test systems.

- Interoperability prototyping sessions are usually organized in conjunction with UnPlugFests. They exist primarily to verify new specifications rather than verifying the implementations of the specification in a product. Unlike other sessions, the results of the IOP tests will be recorded anonymously so that the information can be made available to the Architecture Review Board (BARB) of the Bluetooth SIG, ensuring the specification is robust and error-free before adoption.

During a typical test session, two teams meet at opposite sides of a table noted in their schedule. After introductions, teams use the Platform Test Capabilities List to establish mutually supported features of the platform. Testing teams then determine what tests to perform, and then begin testing. Team members will always remain on their side of the table unless invited to the other side.

When two implementations do not interoperate it may not be the fault of the implementers. Rather, the root of the issue may be due to an issue in the Bluetooth specification. No matter how specific the designers of the Bluetooth specification aim to be, sometimes engineers interpret the specification differently. Furthermore, some implementation details are intentionally left open for the implementer to decide. That means the interpretations of the specification and the two devices may not interoperate properly. "UnPlugFests provide engineers the opportunity to identify and discuss these issues," says Dr. Mike Foley, Executive Director of Bluetooth SIG. "When implementations do not interoperate or specification issues arise, teams are encouraged to file a specification errata report, which can result in an update of or an addition to the specification. That not only means an improvement for the tested products, but for each device produced on the market." A good example is the specification of Bluetooth 2.1+EDR which was finalized after thorough tests, discussions and research at UnPlugFest 27 in Taipei.

And to conclude ...

The UnPlugFest is more than just a testing event: it has proven its importance across the complete value chain of Bluetooth wireless technology: it has spawned new ideas and new tools for the SIG as an organization and it has improved the specification of the technology on many levels (core, profiles, test updates, etc.). Furthermore, it facilitates creative interaction between companies and provides an never-ending learning curve for all participants. Member companies can bring more quality to the market and reduce aftermarket costs. And finally, the end-user benefits from the driving idea behind the UnPlugFest: making products work better together.

Snippets

Azimuth and at4 wireless expand mobile WiMAX testing

Azimuth Systems has partnered with AT4 wireless, which supplies testing solutions for wired and wireless technologies, to add MIMO channel emulation testing for Mobile WiMAX products to the lab's testing capabilities. WiMAX testing with channel emulation allows real-world conditions to be tested for RF performance, mobility and interoperability, using statistical modelling to provide broad testing in a lab. Azimuth's ACE 400WB WiMAX Channel was designed from the ground up as a MIMO test solution.

Wi-Fi

RV owners want Wi-Fi, not pools

A recent survey found most Recreational Vehicle (RVs – or camper vans, to the uninitiated) owners prefer a Wi-Fi amenity more than a swimming pool. As a result of this demand, Passport America has entered into an alliance with WiFiRV to help its members get wireless service access wherever they go. Ray Fernandez, Passport America owner, commented, "Many Wi-Fi providers are going out of business because they don't understand the industry. Most Wi-Fi companies charge large up-front fees, install unreliable technology, and leave the risks in park owner's hands."

The Recreation Vehicle Industry Association (RVIA) reports that RV sales are the best they have been in 30 years. RV owning households will rise to 8.5 million by 2010.

Bandspeed announces managed Wi-Fi network solution

Bandspeed has announced the introduction of its wireless LAN equipment and management software to be sold directly to the SME market. The new AirMaestro 3100AG Virtual Controller Access Point (AP) has been combined with Bandspeed's AirMaestro WLAN monitoring and management software as a complete WLAN solution. It integrates simultaneous, dual-band Wi-Fi access, wireless security and spectral analysis into an automated system.

uwb/w-usb news

WiMedia Alliance certifies first UWB products

A little before the 'High Speed Bluetooth – is it Wi-Fi or is it UWB?' debate cropped up at the IMS/Bluetooth SIG conference in London (see page 9), the WiMedia Alliance announced earlier during October that it had certified the first silicon products on its UWB Common Radio Platform.

A total of 12 platforms from WiMedia members Alereon, Artimi, Intel Corporation, Realtek Semiconductor, Staccato Communications, Tzero Technologies, WiQuest Communications and Wisair have apparently successfully completed both phases of the Alliance's compliance and interoperability testing.

Stephen Wood of Intel, and also president of the WiMedia Alliance commented: "This is a pivotal development for UWB. WiMedia Platform Certification ensures a high-level of interoperability among WiMedia-based applications and provides assurance to original equipment manufacturers (OEMs) that products incorporating WiMedia Certified platforms will operate with minimal interference from other devices, enabling a positive user experience for their customers. With certified platforms available, manufacturers can begin utilizing WiMedia UWB in their consumer products at an accelerated rate."

Silicon certified on the WiMedia platform provides the foundation for a number of high-speed wireless protocols, including Wireless USB and – contentiously today - next generation Bluetooth. Utilizing the WiMedia specifications, these applications provide low power consumption and data rates of up to 480 Mbps in the wireless personal area network (WPAN).

The WiMedia Alliance has held a series of interoperability testing events since its certification program was launched in early 2006, presumably similar to the Bluetooth SIG's

UnPlug Fests. WiMedia Certified platforms undergo two phases of testing against the Alliance's international UWB standards (ISO/IEC 26907 and 26908). In the first phase, vendors test and "register" Physical Layer implementations (PHYs) based on the WiMedia PHY specification. Registered PHYs are then combined with a Media Access Control (MAC) layer and submitted for certification as a complete platform. Platforms that successfully complete each level of the certification program are granted official platform certification. This designation ensures that certified platforms will coexist with other certified platforms, and perform as expected, according to specifications.

Getting these silicon solutions certified is without doubt an important milestone for the WiMedia Alliance companies. They just need to get some product out into the market now so that the 'continental-drift' towards Wi-Fi can be halted.

Staccato achieves WiMedia certification and further funding

UWB company Staccato Communications has been able to make two important announcements recently. First, its Ripcord product family has earned official WiMedia Platform Certification – part of the group of such products mentioned on this page.

Staccato also announced today that it has closed an additional $17.5M in equity financing. The funding will be used to launch Staccato's first-generation, 110nm single-chip solution, and to continue development of the company's second-generation 65nm single-chip, Certified Wireless USB and Bluetooth v3.0 products. Investors included Allegis Capital, Bay Partners, Charles River Ventures, Formative Ventures, Interwest Partners, and Vision Capital among others.

The UWB companies have been under some pressure recently due to the time it has taken to get product to market, so this can be seen as a key vote of confidence in UWB from the financial

community. Staccato's chairman and CEO Marty Colombatto certainly seemed pleased, stating: "This additional capital allows Staccato to continue expansion of our operations and accelerate our industry leading roadmap to meet and exceed our customers' expectations."

Co-founder and CTO Roberto Aiello added: "Achieving WiMedia Platform Certification demonstrates Staccato's commitment to delivering the best-in-class products to our PC, CE and mobile device customers in that we not only offer single-chip solutions, but also a solution capable of simultaneous support of multiple protocols including Certified Wireless USB and Bluetooth v3.0. Our architecture and platform are now certified interoperable and compliant, which enables multi-vendor interoperability and promises lower customer risk."

Staccato's 110nm digital CMOS silicon includes RF, Digital Baseband, Media Access Controller (MAC), Memory, 32-bit RISC Processor, Encryption Engine and various I/O including USB 2.0 Host, USB 2.0 Device and SDIO 1.1 Device.

... and partners with Japanese disty for Certified Wireless USB

Staccato has appointed Hakuto, a full service distributor, as its new Japanese distributor for the Ripcord family of single-chip, all-CMOS products, following Ripcord's recently secured Japanese TELEC regulatory approval. Staccato had already opened a branch office in Tokyo in 2006.

Hakuto imports various products through partnerships with over 200 suppliers worldwide and has established itself as a pre-eminent distributor with an expansive network of OEM resellers. "Hakuto is exceptionally well-positioned to represent Staccato in Japan because of their deep relationships with our key customers in the consumer electronics, PC and peripheral, and mobile markets. This new partnership will significantly strengthen and expand our customer support in Japan," said Marty Colombatto.

wi-fi/wlan news

Motorola addresses Wi-Fi network management

Motorola, Inc. has announced an integrated suite of management tools for enterprise mobility systems that address critical pieces of network management, including wireless LAN (WLAN) planning, monitoring, security, analysis and device management.

Available individually, or as part of Motorola's RF Management Suite, Motorola integrated management tools can share data and be accessed through a single console, providing one point of contact for end-to-end WLAN infrastructure and device management.

"An IT manager who can see only one aspect of the Wi-Fi network at a time – in fragments – is not seeing a clear view of overall system health," said Sujai Hajela, vice president and general manager of Enterprise WLAN, Motorola Enterprise Mobility business. "Motorola's RF Management Suite is greater than the sum of its parts when used together, providing a holistic view of the network, simplifying the complex task of management that ultimately helps to decrease the amount of time an administrator must spend addressing dissatisfied or frustrated mobile users."

Motorola created the RF Management Suite to address specific requirements for managing today's enterprise mobility networks, integrating four key components: Motorola LAN Planner, Motorola RF Management Software, Motorola Wireless Intrusion Protection System (Wireless IPS) and Motorola Mobility Services Platform (MSP) RF Management Edition.

Products in the Enterprise WLAN portfolio include thin, full-function and mesh access points, wireless switches and radio frequency (RF) switches that can manage up to 3,000 access points.

SiGe shows RF front-end module for 802.11n

SiGe Semiconductor has announced an RF front-end module for Wi-Fi products designed to comply with the IEEE 802.11n specification. The SE2593A provides a complete 2.4 GHz and 5 GHz WLAN multiple input, multiple output (MIMO) RF solution including all of the circuitry required between the transceiver and the antennas.

"The new SE2593A provides the optimal solution to customers aiming to capitalize on the growing market for high-bandwidth wireless services," said Jose Harrison, director product marketing, computer and consumer at SiGe Semiconductor. "Our new module is easy to implement, and provides integration, performance and flexibility that surpasses any other solution on the market. These benefits allow manufacturers to get their products to market quickly while also ensuring an optimal end-user experience."

The SE2593A features 2.4GHz and 5GHz power amplifiers and low noise amplifiers, power detector, transmit and receive switch, diplexers and associated matching in a miniature land grid array package that measures 5mm x 6mm x 1mm. SiGe suggests that the new front-end module replaces up to 20 components which would be required to implement a discrete 1x1 MIMO solution.

SiGe claims the SE2593A is the smallest commercially available MIMO front-end to integrate a dual-band LNA, and tells Incisor that it is sampling to lead customers now.

Boingo Wi-Fi access for Nokia

Boingo Wireless Inc., which provides access to what it claims is the world's largest network of Wi-Fi hotspots, tells us that Boingo Mobile is now available for selected Nokia handsets and Internet Tablets. Provided you have one of the compatible devices, and with the addition of Boingo Mobile, you can automatically connect to Boingo's network hotspots across the globe for just USD 7.95/EUR 5.95/GBP 3.95 per month.

Owners of suitable Nokia Wi-Fi enabled devices -- including selected S60-based smartphones and Linux-based Internet Tablets -- can download and install Boingo Mobile, which enables roaming access to public hotspots. The Boingo software identifies Boingo-enabled hotspots and automatically authenticates users with their Boingo account.

"Millions of Nokia customers worldwide can use Boingo Mobile to effortlessly connect to Boingo's hotspot network, allowing them to enjoy bandwidth-intensive applications at blazing-fast speeds," said Dave Hagan, Boingo president and CEO. "Boingo Mobile simplifies the connection process and eliminates the cumbersome task of navigating public Wi-Fi walled gardens."

Boingo Mobile is available now as a downloadable application via Nokia Download! on the Nokia N95, N80, N80 Internet Edition multimedia smartphones, and at Boingo's web site for selected Wi-Fi enabled Nokia S60-based devices.

Support for other Nokia devices will follow.

802.11n: Coming of Age

by Dean Anthony Gratton

We all want our children to mature sensibly and to ultimately become independent adults. Throughout their teens we often feel the need to shield them from the harshness and stark reality of the larger world. Nevertheless, it seems that the adolescents of today are all too eager to acquire grown up responsibilities, something that invariably leads to feelings of disillusionment when adulthood finally arrives. In preparation for the larger world, we try to guide and assist our offspring by giving them a sense of the 'right thing to do' along with teaching them how best to avoid common pitfalls. Good parenting skills however, are not always present due to various socio-economic and other demographically linked characteristics of society today and out of this neglect, certain families will inevitably produce rebels or 'black sheep', whose nurturing needs have not been adequately met.   802.11n is a black sheep in the very large 802.11 family and the Wi-Fi Alliance undoubtedly has to take its responsibility as a parent very seriously.   We cannot blame its lack of nurture on disadvantage or deprivation, on the contrary, Wi-Fi has enjoyed a privileged upbringing – the splendours of it being the brightest in its class of short-range wireless technologies and, most of all, being an unquestionably well-rounded and well-adjusted technology; something that continues to make its peers envious. It's spottier and far more shy classmates could only watch in awe as Wi-Fi was crowned Mr Popularity and most eligible bachelor in the short-range wireless world.

The rebellious 802.11n is increasingly becoming a black sheep in this elite family due to its parent's disregard for its wellbeing. It has been allowed out far too early for its own good – its parents turning a blind eye to its refusal to complete its homework before going out to play. Some of us miss the obvious warning signs, as it's clearly crying out for attention and ultimately for help, but without its parent's proper intervention, it's well on the path to living off the family's inheritance and enjoying a spoiled-brat status.

Certified, or not?

The Wi-Fi Alliance is a non-profit organisation, which certifies the family of 802.11-enabled products. It was formed as a result of the IEEE not being capable of confidently compliance-testing the range of 802.11 technologies. In other words, the IEEE wished to remain focused on defining the future growth of the technology and placed the Wi-Fi Alliance, which formed in 1999 and which was known formerly as the Wireless Ethernet Compatibility Alliance (WECA), in charge of its compliance and its subsequent certification of products that used any of the 802.11 technologies. It's clear that there is an audience (the manufacturing community) that takes its guidance from the Alliance and, unfortunately, the greater developer community has been mislead into knocking out a number of products that may not necessarily comply. It's anticipated that early adopters of pre-N (or cringingly 'Draft-N') certified products will benefit long term from this still immature technology, however, with many tenuous manufacturers disclaimers, these products may not necessarily be future-proof. In its naivety, the Alliance's Wi-Fi Certified logo (which it is responsible for awarding) questionably contains a revision for 'draft-N' compliant products. Never in a product planners roadmap or an engineer's wibbly wobbly world, would s/he start work or, heaven forbid, dare to release a product from a draft specification; yet it seems that in the Alliance's case, this is exactly what has been allowed to happen.

It is evident that the Wi-Fi Alliance's other family members are doing remarkably well outside the bosom of its kin. The family to date comprises several letters denoting aspects of technology features and functions that should resolve a particular connectivity problem. Notably, 802.11b, 802.11g and 802.11a are a few family members that are arguably more recognized than even UK Prime Minister Gordon Brown. The majority of Wi-Fi-enabled networks today are 802.11b/g-enabled access points and clients, in turn, providing consumers with access to a plethora of Internet-based services. Prior to 802.11b's release in 1999 (which coincided with the formation of the Wi-Fi Alliance), a number of 802.11-enabled products were sparsely available; 802.11b offered backward compatibility with these early products, as well as introducing what we now regard as Wi-Fi. Similarly, 802.11a was released in the same year, but alas, has not enjoyed the same success as its sibling. It wasn't until 2003 that we first saw 802.11g, again offering that all important backward compatibility with 802.11b products. You may already be aware that 802.11a-based products operate on a 5GHz frequency, whereas 802.11b/g-enabled products use the crowded 2.4GHz band. It's important to understand that consumers have already made an investment in Wi-Fi technology and that they don't necessarily want to feel obliged to upgrade – here is where 802.11n has the potential of becoming the brightest sibling. The premise of 802.11n is to offer connectivity speeds up to an alleged 300Mbit/s to further extend the range of video and audio applications that can be supported over a connection. In a legacy/mixed mode environment 802.11n will cleverly downgrade gracefully to support the combination of 802.11a/b/g networks. In an ideal configuration 802.11n will operate in a green-field mode context where it will interoperate purely with n-enabled products; naturally, this is expected to take several years but, more importantly, consumers are afforded the flexibility to upgrade when the time suits →

them. But - the IEEE 802.11n specification is not expected to be finalised until late 2008.

Nice and simple does it

Wi-Fi's popularity has reached such a level with consumers that no-longer do we need to configure, point and direct the device – it just simply works. 802.11b/g remains fundamental in the success story of Wi-Fi, and even more critically, the letters are slowly dissolving as more and more consumers are just simply recognising Wi-Fi as a competent means of connectivity. Perhaps, here is where potential confusion sets in and deservedly the Alliance should be cautioned over its poor parenting. The Alliance may well have misled the manufacturing and techno-consumer society into believing that their pre-N certified products are a full pubescent member of the Wi-Fi family, as they display that alluring and important certification logo. A consumer may also be lulled into a false sense of confidence by the Wi-Fi Alliance's certification logo, but - with multiple manufacturers innocuously tweaking the 'draft-N' specification to meet their individual consumers' needs – it will inevitably be consumers that will ultimately lose out.

Could things have been done better? Well, possibly. We can look retrospectively at the Bluetooth Special Interest Group's (SIG's) rigmarole and indoctrination and see that it is in fact a blessing in disguise. Undeniably, manufacturers may have huffed and puffed at the sheer kafuffle of qualifying Bluetooth-enabled products, but ultimately these products were not qualified and released onto the market until such time as a specification has reached full publication. Having said that, the Bluetooth SIG may be stricter in their qualification and certification regime, but we all know that some children like to test their parents. The majority of Bluetooth manufactures are privy to a number of early specifications, just like most technical bodies. However, some manufactures dared to release products with a 0.95a draft specification knowing full well that the sparkling blue shield will not tip-toe their way; yet still choose to use the fact that in part, their product has already been qualified as a warrant to print the Bluetooth qualification logo on their product packaging, albeit with accompanying disclaimers. It seems to be an unavoidable means of reeling in new customers and there's not much that the Bluetooth SIG as a parent to prevent this happening completely - though it has gone further than others to police unauthorised use of its logo and brand name. Moreover, consumers who have invested in a particular product may not

necessarily be inclined to purchase from the same company again as the products may well be no-longer forward compatible.

How important is that brand?

In taking a cynical perspective, manufacturers are eager for consumers to purchase into their particular brand (nothing new there then!). But in their eagerness, coupled with 'a let's flog-to-all' attitude, manufacturers may be shooting themselves in the foot. A consumer will naturally acquire trust in a particular brand, but we all know that brand loyalty has evolved into an ideology, as consumers will shop for the best price and features these days. The Wi-Fi Alliance perhaps should have been a little more restrictive in 802.11n's playtime, but if we take a closer look at the Alliance we may just uncover a paradox. The Alliance itself comprises the same manufacturing community developing pre-N products, but in a dichotomy the manufacturers are forced into providing products to consumers who can be heard clearly screaming "I want it now."   In a Victorian stance, children should be seen and not heard, and in 802.11n's case this may be a true archaic perspective. Nevertheless, a strict and solid parental foundation along with exposure to the right peer pressure would obviously avoid typical teenage tantrums and parent's conceding to every whim. The Wi-Fi Alliance could be said to be guilty for not reigning in a manufacturing community that inexorably is looking for the next big thing. It seems that the Wi-Fi Alliance may have been too keen to allow 802.11n to mature before it has come of age.

Snippets

Bluetooth

SIG/cops raid fakers in Southern China

The Bluetooth Special Interest Group (SIG) has been protecting its brand again. A police raid based on information provided by the Bluetooth SIG against a factory in Southern China has been carried out successfully with thousands of products and components infringing upon the Bluetooth SIG's registered trademarks being seized.

During the law enforcement action on September 12, Technical Supervisory Bureau and Public Security Bureau (aka the "Chinese Authorities") found over 4,000 units of trademark infringing headsets and thousands of electronic parts and components waiting to be assembled at the suspected company – Shenzhen Wanshuo Digital Technology Co Ltd in Shenzhen. The case is being transferred to the Public Security Bureau for possible criminal prosecution.

UWB / Wireless USB

New CEO at WiQuest

WiQuest Communications, which develops Ultra Wideband (UWB) silicon, software and manufacturing solutions has a new CEO and President in the shape of Steve Perna. He will work with Matthew Shoemake, WiQuest's founding chief executive officer, who was named WiQuest's chief strategy officer responsible for worldwide engineering, operations and corporate strategy.

zigbee / 802.15.4 news

ZigBee adds features

The ZigBee Alliance (ZBA) has approved new features for the ZigBee specification that are intended to expand ZigBee's capabilities. The original set of features published in 2006 is now known as the ZigBee Feature Set. The expanded set of features is known as ZigBee PRO.

The newly released feature sets are designed to interoperate with each other, and published highlights include:

- Network Scalability – Improved support for larger networks offering more management, flexibility, performance choices
- Fragmentation – New ability to divide longer messages and enable interaction with other protocols and systems
- Frequency Agility – Networks dynamically change channels should interference occur
- Automated Device Address Management – Optimized for large networks with added network management and configuration tools
- Group Addressing – Offers additional traffic optimization needed for large networks
- Wireless Commissioning – Enhanced with secure wireless commissioning capabilities
- Centralized Data Collection – Tuned specifically to optimize information flow in large networks

In addition to its original capabilities, the ZigBee Feature Set also gains optional use of the Frequency Agility and Fragmentation features described above.

Bob Heile, chairman of the ZigBee Alliance, was understandably positive: "ZigBee now gives unparalleled choices for companies looking for the right low-power, low-cost wireless networking standard. These new features make ZigBee stronger and play a key role in expanding ZigBee's

value as a key part of innovative AMI programs for utility companies around the world. No other technology can wirelessly connect an exterior utility meter to an interior home automation network or building control networks as efficiently and effectively as ZigBee."

At the time of this announcement, the ZBA told Incisor that with the addition of these additional features to the ZigBee specification, it is shifting its attention to development efforts facilitating the deployment of the technology for energy management and efficiency, specifically in areas like public application profiles for advance metering infrastructure (AMI). Public application profiles enable end-to-end, multi-vendor interoperable solutions in markets such as AMI, home automation, commercial building automation and telecommunications.

Access to the updated ZigBee specification is available immediately for all ZBA members, and free public availability of the new features is apparently scheduled for early 2008.

Sweden boasts world's first ZigBee city

Here's a poke in the eye for the forecasters of ZigBee's doom! The city of Gothenburg (or Göteborg), Sweden, Incisor is told, will soon form the world's largest ZigBee network when it deploys the NURI AiMiR Advanced Meter-reading Management (AMM) System for its 270,000 homes.

Göteborg Energi AB, one of Sweden's largest energy companies, has chosen the NURI AiMiR AMM System for its Advanced Metering Infrastructure (AMI), and, it is claimed by Ember, whose technology is being used, this makes it the world's first company to cover a whole city with a wireless ZigBee infrastructure for metering services. This deployment will also make

Gothenburg the world's first ZigBee city. For once, we don't have a problem with believing a 'world's first' claim.

Göteborg Energi AB is creating a city-wide wireless mesh network with the AMM System and hopes to save millions of euros by eliminating the need to manually read electric meters at homeowners' premises and be able to bill the actual usage to the customers. And as an environmentally-conscious public utility, the ZigBee AMR platform will also help it deliver sustainable energy services while reducing the impact of its operations on the environment.

NURI's AiMiR meter reading unit is integrated with Ember's ZigBee system-on-a-chip and EmberZNet networking software to create a wireless mesh network for remote metering. Ember claims it will be able to remotely meter a home's electricity usage more efficiently, accurately and at lower costs, while giving customers greater insight into their energy consumption and better customer service.

"We have continuously adopted new technologies that improve energy delivery while contributing towards the development of a sustainable society, such as the world's first CO_2-free vehicle factory we're creating with Volvo," said Tomas Arnewid, Göteborg Energi AB's project manager. "Our city-wide ZigBee AMR network is another example of our long history as infrastructure builders. We see the ZigBee infrastructure as a great added value to our investment in the NURI advanced metering system. There is great potential for new services that can be offered by the mesh network."

"Gothenburg's decision to choose ZigBee technology shows the value of the ZigBee standard as a key part of innovative AMI programs for utilities around the world," said Bob Gohn, Ember vice president of marketing. "NURI Telecom is one of

➔

zigbee / 802.15.4 news

Ember's earliest and most valued customers and this success is a reflection of their tremendous efforts, experience and focus in the metering space. Ember is focused on helping consumers, businesses and utilities better manage energy resources; and the platform's field proven features of reliability, robustness and scalability make it an ideal fit for AMI applications."

It would only need a few more announcements like this for ZigBee to start to be seen as a force to be reckoned with in the low-power wireless market. Making ZigBee big still has its challenges, but ZigBee-enabling a meter reading system for 270,000 homes is not a bad start.

Low-cost ZigBee antennas

UK-based specialist antenna manufacturer CTi Ltd has launched two new series of

low-cost ZigBee antennas enabling a choice of configuration options. Both series are suitable for use with any IEEE 802.15.4 standard 2.4 GHz ZigBee wireless system, and can accommodate vertically and horizontally polarised signals.

The CTI-SB series of stubby ZigBee antennas comprises three models, with a choice of straight and right-angle SMA male and SMA male RS connectors. For applications that demand increased signal strength, the slightly longer CTI-RA series of rubber ZigBee antennas provide a gain of up to 9 dBi. These antennas employ co-linear elements - contained within a semi-flexible rubber housing - to maximise RF efficiency, and

feature an integral swivel joint to facilitate orientation. The CTI-RA series offers a choice of SMA male RS and TNC male RS connectors.

For designers of ZigBee systems intended for operation in the 868 MHz European or 915 MHz American ISM bands, CTi has embedded and peripheral GSM antennas that operate at these frequencies.

All CTi ZigBee antennas feature gold-plated connector pins to ensure signal integrity, have a nominal 50 Ohm output impedance, and exhibit an output VSWR (Voltage Standing Wave Ratio) of less than 2:1.

Analysis
ID cards inch closer

By Manek Dubash

News came in last week that the awards for the Government's unpopular ID cards contract are growing closer -- the shortlist is down to just eight suppliers, most of whom are the usual suspects.

But this week, the debate has livened up considerably. No-one has a greater admiration than I for the third party in British politics -- mainly for its pluck and persistence rather than its policies, it has to be said. Against all odds, it soldiers on in an electoral system that disadvantages it hugely. This of course allows it to take risks, something it's often been too reluctant to do.

But this week sees a putative leader of said party, which is currently without a leader, stating that he'd refuse to give the information required once ID cards become compulsory.

Many people oppose the ID cards scheme, and not just on the practical grounds that it cannot work because it's impossible for it to be secure enough while remaining accessible to thousands

of public servants. They would argue that it's only a matter of time before personal and irrevocable biometric data ends up being stolen and that it's a huge invasion of privacy.

The Lib Dem candidate would appear to be among them, and has by his statement raised the issue in the national consciousness.

However, words are cheap, so we'll wait and see what happens. After all, whether or not it comes to compulsory donation of data is a moot point. By the time the scheme goes live, most people will have given enough information on their passport applications to construct an ID card. That excludes those who applied for a passport before last year's deadline but even they will be forced to supply fingerprints and so on within the next few years. That's when we'll see just how strongly people feel about the issue.

More brickbats headed in the direction of the scheme from a famous fraudster who pointed out that it takes just one weak link, such as a corrupt or incompetent official, to break the security of the scheme. Interestingly, the Home Office was hurt deeply enough by the allegations to respond, and insisted that the scheme will be secure.

What else would they say?

Meanwhile, Britain continues to drift into being the world's most surveilled society -- which on the bright side is good business for digital video camera and networking equipment vendors.

There's always a bright side....

events

DATE	EVENT	LOCATION	NOTES	LINK
Nov 6 2007	Bluetooth Developers Conference 2007	Yokohama Royal Park Hotel, Yokohama, Japan	-	www.bluetooth.org
Dec 4 - 5 2007	Wireless Coexistence Summit	San Jose, California, USA	-	http://www.imsconferences.com/WCS/
Jan 2008	2008 Wireless Symposium	Las Vegas, USA	Email: Vince Holton - vholton@incisor.tv or Steven Clarke – sclarke@incisor.tv	
Jan 7 - 10 2008	2008 International CES	Las Vegas, USA	-	http://www.cesweb.org/
Feb 11 - 14 2008	3GSM World Congress	Barcelona, Spain	-	http://www.mobileworldcongress.com/
March 31 2008	Pheonix, Arizona, USA	Bluetooth SIG All Hands meeting	-	www.bluetooth.org

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