WIMEDIA GUIDES UWB THOUGH STORMY WATERS

THIS ISSUE | CONSOLIDATION AND FUNDING CHALLENGES HIT UWB INDUSTRY
PREVIEWING 802.11N FOR MOBILES I 2008 WIRELESS REVIEW
NEW SMART HOME PLATFORM FROM NOKIA

it had to happen

Consolidation in the UWB industry, that is. It always does in any new technology sector. A group of young, aggressive and ambitious companies, typically fuelled by venture capital money, all compete to own the largest possible share of a new market.

Some will make it, some won't. In the time I have been watching the short-range wireless industry, the companies that fail are usually the ones that have the least good turn on the technology. Their product may not stink, but there is better out there. However, for the leading companies in the UWB industry, another factor has had a major effect. That is the state of the world's financial markets. Several of the UWB companies reached the stage where they needed more funding, and it just wasn't out there. This has lead to otherwise stable companies, with good products, to bite the dust. The most visible casualty so far has been WiQuest. Artimi was rumoured to be going the same way, but we now learn that it has merged with Staccato – a good and complimentary move.

But behind the scenes I know that things have been in complete upheaval. I'm not going to go into it here, but let's just say that topics like this are what blogging is all about. Hey – **I've got a blog these days!** Maybe some more thoughts on this topic might just filter into my blog .....

And I will finish this piece by thanking you for all of your support as another year comes to an end. To our readers – thanks for continuing to enjoy our content and recommending us to your friends. And to our sponsors and advertisers, well, without you we wouldn't be here. Wherever you live and whatever your religion, I wish you a peaceful and happy end to 2008, and look forward to working with you again in 2009.

**Vince Holton
Publisher & editor-in-chief, Incisor / IncisorTV**

INCISOR TV AT CES

The Incisor TV film crew will be at CES 2009. To discuss marketing opportunities, please contact:

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Industry feedback:

'No other vertical market title addresses the short range RF market like Incisor '

*Alan Woolhouse,
VP Marketing Communications
CSR*

CONTENTS

EDITORIAL CONTACTS

news

Semiconductor investment slows

The Global Semiconductor Alliance (GSA) has released its Q3 2008 Semiconductor Funding, IPO and M&A Report. The report includes trend analysis, regional breakdowns and end-market breakdowns of semiconductor funding, initial public offering (IPO), and merger and acquisition (M&A) data for fabless companies, integrated device manufacturers (IDMs), semiconductor suppliers and solar suppliers.

The report findings confirm the observation that venture capitalists are investing less in fabless and IDM companies because of higher design costs and consolidation, with the number and value of fabless and IDM funding deals decreasing for two consecutive quarters. In Q3 2008, 21 fabless and IDM companies raised $231.6 million, a dollar amount decrease of 44 percent quarter-over-quarter (QoQ) and 57 percent year-over-year (YoY). The total number of fabless and IDM transactions closed in Q3 2008 decreased 13 percent QoQ and 45 percent YoY.

When analyzing M&As involving fabless and IDM companies, the volume and value of announced deals accounted for 55 percent and 34 percent of the overall Q3 2008 semiconductor M&A total, respectively.

Other statistics from the GSA report included:

- Thirty-five semiconductor companies raised $511.7 million in Q3 2008, a dollar amount decrease of 4% QoQ and 36% YoY. The total number of semiconductor deals closed in the quarter decreased 10% QoQ and 44% YoY.

- As a result of the weak economy and the increased cost and time required to go public, for the third consecutive quarter, the semiconductor IPO market, which includes fabless/IDM companies, semiconductor suppliers and solar suppliers, saw no venture-backed companies go public. However, one semiconductor company did file in Q3 2008 – Avago Technologies.

- For the third consecutive quarter, M&A activity continued to decrease with 31 semiconductor M&As (i.e., M&As involving a fabless company, IDM or semiconductor supplier) – a decrease of 11% QoQ, but a 15% increase YoY.

So, it is a tough market out there for any company that is seeking funding at the moment. New ventures may not get funded at all, while second and third-round funding for existing businesses is that much harder to find. This has been apparent in the UWB sector. WiQuest fell victim to the current funding drought, whereas Staccato Communication's proposition was evidently good enough to allow the San Diego company to raise another $20 million, and pick up Artimi along the way.

Who says funding isn't available?

Well, the GSA may be reporting that money is hard to come by for semiconductor companies, and we're not about to deny it. But that doesn't mean that funding has stopped completely. This issue of Incisor included two stories about companies that are flying in the face of financial adversity.

Elsewhere in this issue we report that UWB company Staccato Communications

has just secured $20 million in funding. Well, the amount involved here may not be as big, but it is probably just as significant to LM Technologies Limited, which tells Incisor that the Mercia Technology Seed Fund (MTSF) and the Advantage Early Growth Fund (AEGF) have just completed an initial investment of UK£300,000 in LM, which is an UK company set up to develop wireless products, including what is claimed to be the world's smallest Bluetooth adapter.

LM already has a range of data connectivity products utilising Bluetooth, Wi-Fi and mobile phone technology. The company's founders said that the investment from Mercia Fund and AEGF will enable them invest in its technical capability and accelerate the development of new products.

As part of the investment package, Warren Mason, will join the company as Chairman. Mason previously purchased and turned around the fortunes of Total Home Entertainment before selling that company.

Mike Sims, Managing Director of LM Technologies, added "We are delighted to have received support from two venture capitalists, despite the current financial conditions. Not only will the funding provided enable us exploit more of the opportunities for our technology but the guidance from an experienced entrepreneur such as Warren Mason will be invaluable as we grow the business."

There is no doubt that things are tough in the financial markets, but these two stories just go to show that there is no reason to allow gloom and despondency to prevail, and for the so-called global recession to be a self-fulfilling prophecy. If you have good products, and are prepared to work hard, investors can still be found to back your business.

news

CSR launches Bluetooth remote control dev kit for automotive

CSR has announced BlueCore TouchLITE, a Bluetooth remote control development kit for automotive use based on its BlueCore technology.

BlueCore TouchLITE allows manufacturers to include a Bluetooth remote control for navigation systems, in-car multimedia devices and MP3 players. Unlike traditional infrared remotes, Bluetooth requires no line of sight, supports multiple button presses, the range is increased up to 30 meters and several target devices can be easily supported. CSR told Incisor that one of BlueCore TouchLITE's most important features was support for Bluetooth v2.1, which means that two single batteries will last more than 500 days in a typical usage scenario.

BlueCore TouchLITE also benefits from other Bluetooth v2.1 features such as sniff-subrating, which provides products with the lowest power consumption and latency when connected. In Sniff mode (or Stand-by), the TouchLITE remote control consumes only 0.1mA of current.

Based on CSR's BlueCore4-External chip, the BlueCore TouchLITE development kit comes complete with a fully documented hardware example design, Bluetooth software stack, Bluetooth profile suite, and example application software.

"BlueCore TouchLITE makes it easy for manufacturers to include a Bluetooth remote control in automotive applications," said Rafik Jallad, Vice President of the Automotive Business Unit at CSR. "With so many in-car devices already including Bluetooth it makes sense to have a Bluetooth remote control as well. Bluetooth v2.1 brings down power consumption while at the same time keeping all

Bluetooth features. We expect to see a lot of exciting products using TouchLITE and Bluetooth v2.1 in 2009."

The example application running on CSR's BlueLab development environment allows users to customise the software features and/or user interface to meet their own specific product requirements using the Bluetooth v2.1 BlueCore TouchLITE software as a base. BlueLab is a development environment for engineers writing software to run on CSR chips.

TouchLITE is available now.

Bluetooth + Java? Must be Rococo...

Long term Incisor readers will remember Rococo Software from the early days of Bluetooth. Well, they are still out there and have been pushing and promoting Bluetooth in the Java world for nearly ten years now. Rococo was one of the original members of the JSR82 Expert Group, which defined JSR82, and it has had some success - shipping its JSR82 solution on 150 million phones to date (customers include Motorola, SonyEricsson, Sagem, Sharp and others). Rococo has now partnered with MicroDoc to announce the general availability of IBM's Websphere Everyplace Custom Environment (WECE) Runtime with built-in support for the Java/Bluetooth APIs.

According to Rococo, this offering is the first time an "off the shelf" version of WECE has been made available with JSR82 support. This enables companies in the embedded marketplace to take advantage of the JSR82 APIs "out of the box", and create solutions with a lower total cost and lead time to delivery.

"There's been a steady increase in interest in the embedded Java platform, especially

in the automotive, transport and machine-to-machine markets, " said Sean O Sullivan, CTO with Rococo. "We're delighted to have joined forces with MicroDoc to offer a shrinkwrap solution to these markets, and we look forward to continuing to enhance the JSR82 offering with richer APIs to reduce development time and enable the full power of Bluetooth to be harnessed in a variety of scenarios."

Bluetooth SIG creates low energy training programme

The Bluetooth SIG tells us that now is the time to start educating the market about Bluetooth low energy. The SIG launched a series of technical training sessions at Electronica trade fair, which took place in Munich during November. Preceding the keynote by Anders Edlund, Marketing Director EMEA of the SIG, representatives from member companies were given a technical training on the possibilities of Bluetooth low energy.

The SIG's view is that development of Bluetooth low energy is in the final stages. Development is expected to be completed during 2009, with finished products coming to market. With the standard being released in 2009, the SIG predicts that usage scenarios will develop for mobile phones and PCs, involving connections with devices such as watches, sports & fitness, and health and medical sector devices.

So, with the Electonica event, the Bluetooth SIG has kicked off a series of training events at major industry shows, the aim being to bring the industry up to speed. The training provides an overview of how the standard works, the products it enables and the opportunities that it will provide for the new generation of web-connected devices.

news

Stereo Bluetooth headsets - waiting to hear the good news!

IMS Research has been looking at the Bluetooth headset market, and notes that consumers have warmed relatively easily to the Bluetooth-enabled mono headsets for mobile phones; the market for them is steadily increasing by 10 to 20 million per year. Though other considerations have had an effect, the chief attraction was to drive (legally) with hands on the wheel, while using a phone.

The task of selling stereo Bluetooth handsets is proving much tougher, and much harder than the suppliers expected. While yearly sales of mono headsets should reach 100 million in a few years, stereo models are struggling to get to a tenth of this number.

According to IMS Research analyst Filomena Berardi, the route to success lies in working out how to persuade people to buy the more expensive stereo headsets, and why they should chose Bluetooth over wired. "Many potential buyers are happy enough with their wired headsets to listen to their iPod or another personal media player. The cell phone is still not the preferred way to listen to music. And Apple, the brand leader, has not enabled Bluetooth on either the iPod or the iPhone."

Further, IMS feels that there are concerns over the audio quality obtained through the A2DP profile and the appeal of wireless Bluetooth headsets in niche markets.

However Berardi believes it is not all doom and gloom for Bluetooth stereo headsets. "Should audio standards be improved, or more importantly, should Apple enable Bluetooth in one of its iconic devices, the market could quickly see more Bluetooth stereo headsets models being launched and the trajectory of mono type being followed."

Wipro-NewLogic WLAN/Bluetooth RF IPs in TSMC 90nm

Wipro-NewLogic tells us that its Bluetooth 2.1+Enhanced Data Rate RF IP and 802.11a/b/g WLAN RF IP are silicon proven in TSMC 90nm.

"Providing leading edge RF IP enabling newer types of SoC integration has always been our differentiator", says Senthil Murugesan, CEO of Wipro-NewLogic. "Our Bluetooth and Wireless LAN RF IPs are the catalysts of highly integrated and competitive wireless solutions in consumer electronics, gaming and wireless sensors markets. We are currently working with our customers to develop highly integrated wireless interface based SoCs with our Wireless IPs."

Wipro-NewLogic's BOOST RF contains all the functions for a complete Bluetooth 2.1+EDR radio and modem, while its WiLD90 RF is the 2nd generation of 802.11a/b/g radio IP that Wipro-NewLogic is offering. It features all the functions for a dual-band, 2.4 GHz and 5 GHz radio.

Continua-compliant Bluetooth development kit

Corscience and Stollmann have agreed to introduce a Continua-compliant Bluetooth development kit to the market incorporating the Bluetooth Health Device Profile (HDP) and the IEEE 11073 data protocol. The Continua Health Alliance is a global organization with over 150 members who are committed to the development of telemedicine markets and standardization. Continua's relationship with Bluetooth was discussed by Bluetooth SIG marketing director Anders Edlund in the Incisor TV feature Bluetooth energy wireless technology.

The development kit will enable manufacturers of medical devices to integrate the Bluetooth Health Device Profile (HDP) and IEEE 11073 in their products. The HDP standardizes Bluetooth communication between medical devices and IEEE 11073 is a uniform data format for use in different medical applications. The IEEE 11073 data protocol is implemented by Corscience, building on the Bluetooth technology by Stollmann. The Bluetooth development kit offers medical device manufacturers the possibility to produce wireless, interoperable Continua-compliant medical devices.

Bluetooth PBAP phone shipments to grow 130% in 2009

According to the latest research from Strategy Analytics, global cellphone shipments with the Bluetooth Phone Book Access Profile (PBAP) will grow an impressive 130 percent annually in 2009. Nokia and Honda are among the brands leading the push to integrate PBAP into phones and vehicles.

Bonny Joy, Senior Analyst at Strategy Analytics, said, "Strategy Analytics forecasts global cellphone shipments with the Bluetooth PBAP profile to grow an impressive 130 percent annually in 2009. PBAP pairs a phone's SIM card with a hands-free car kit, making the address book and contacts accessible to, and more convenient for, the vehicle driver."

Neil Mawston, Director at Strategy Analytics, added, "Nokia and Honda are among the brands leading the push to integrate PBAP into phones and vehicles. Nokia has launched several smartphones with the PBAP profile this year, while Honda (Acura) has introduced an emerging number of cars and SUVs with phonebook exchange."

news

IMS looks at combo wireless IC market

Since the first combination IC announcements in 2005, how has the market developed? Which combinations are going to be most widely used? In response to these uncertainties, IMS Research is looking at these topics for the 2009 edition of it report, "ICs with Multiple Wireless Functionality".

The research will consider combination ICs which include two or more of the following technologies; classic Bluetooth, High Speed Bluetooth, Bluetooth low energy, FM, WLAN, UWB, WiMAX, GPS, NFC, Cellular and, if appropriate, proprietary technologies. As well as including estimates for 2008, forecasts of popular combination scenarios and end-equipment markets will be provided for the years 2009 to 2013.

The report will address issues such as:

- Which combination ICs add the most customer value in each vertical market?

- How big will the market be for each of these combinations and over what timeframe?

- How will their uptake be affected by the current economic environment?

- What are the effects of the recent upheaval in the competitive environment?

- Which integration paths have been chosen by each supplier and why?

- What are the cost, power and size savings of combining technologies on a single IC?

- Which alternative design approaches threaten the market for combination ICs?

There is no doubting the significance of the combo chip market and IMS says it will be carrying out detailed interviews with key companies in the industry. If you want to be part of the 2009 edition of this report, or want to buy a copy when it is available, then you know what to do – go to www.imsresearch.com and tell them that Incisor sent you!

Bluetooth low energy test solution from Anritsu

Anritsu is shipping what it claims is the world's first integrated test set to measure Bluetooth low-energy products, as well as a solution to support the Enhanced Power Control (EPC) feature. Anritsu has developed the low-energy test capability to meet market demand as the first generation of Bluetooth low-energy chips are now being sampled by the Bluetooth silicon developers.

As well as performing Bluetooth low-energy measurements in a fully automated test script on the MT8852B test set, a PC application is supplied that enables developers to see the low-energy packet's power and modulation characteristics graphically in a Windows environment.

In addition to the low-energy option, Anritsu is introducing an option for testing devices that support the Bluetooth EPC feature. EPC is being included in the Bluetooth specification to make standard Bluetooth devices more tolerant of rapid power level changes, especially power fades. This update to the specification has introduced a new RF test case that is supported by the MT8852B through software option MT8852B-23.

INCISOR TV Video presentations

When it comes to assessing what is really going on in the market, there is no substitute for seeing products in action and hearing 100% accurate information from the people at the sharp end. Incisor TV provides that insight.

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Bluetooth low energy wireless technology

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A guide to Bluetooth Version 2.1 + EDR

10 years of Bluetooth / Best Bluetooth of CES 2008

CES 2008 – Profile of Parrot

Introducing Incisor

2007 Wireless Symposium

Bluetooth / Wibree launch event (full version)

Incisor TV overview: the Bluetooth SIG / Wibree Forum merge

Best Bluetooth of CES 2007

Incisor profile: Icron Technologies and Extreme USB

Wireless USB special - Introducing Wireless USB

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

INCISOR TV GOES TO CES 2009

YOUR COMPANY CAN BE PART OF A DAILY NEWS SHOW FOCUSING ON THE LATEST WPAN & SHORT RANGE WIRELESS DEVELOPMENTS

MAXIMISE YOUR CES INVESTMENT!

Incisor TV will broadcast a daily news show from the Consumer Electronics Show for the first and second days of this monumental event that brings together more than 2,200 corporate members involved in the design, development, manufacturing, distribution and integration of consumer electronics products.

On Thursday the 8th and Friday the 9th of January – the first two days of CES 2009 – Incisor TV will compile a news and feature show of approximately 25 minutes duration that will be broadcast via the Incisor TV web site. The show will include news bulletins, interviews with senior executives of companies that are attending the show, company profiles, product overviews and a general flavour of trends and developments at this, the most important consumer electronics show of the year.

Attending CES is a major expense for any company, and yet the show lasts for just four days, in one town, in one State in the USA. Doesn't it make sense to make sure that your marketing and PR dollars are spread as wisely as possible? Incisor TV will broadcast your message to a global audience, using today's most effective communication technology – Internet TV. What is more, the IncisorTV programmes will be available to that global audience in perpetuity – www.incisor.tv site visitors are still viewing broadcasts from CES 2007!

For pricing information and to book your place on the Incisor TV CES Daily Show, please contact:

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Option 3
Dedicated interview at IncisorTV suite to create a 2 minute focus piece as part of the daily news show. Product demos can be included provided they are contained in the 2 minute piece.

Option 4
Dedicated interview at client's booth to create 3 minute focus piece to be included in the daily show. Product demos can be included provided they are contained in the 3 minute piece.

All Incisor TV and Incisor magazine content can be viewed at **www.incisor.tv**

new products

Snippets

Parrot pushes NFC pictures

French Bluetooth specialist Parrot has been showing Bluetooth picture frames with NFC for about a year now (see Incisor TV movies Parrot at CES 2008). Now Parrot is pushing the style as well as technology buttons. Its latest NFC-enabled picture frame has been designed by contemporary French artist, Martin Szekely – widely acknowledged as a 'master of minimalism'.

The latest frame from Parrot – called the Specchio (no, we don't know either) - incorporates Innovision's Topaz NFC tag. The Topaz tag, built into the front of the frame, enables an instant connection between a mobile phone and the photo frame, and NFC means that you don't have to go through menus and settings to pair the two devices and transfer your photos via Bluetooth. The frame can also pair with other Bluetooth devices such as laptops, although without NFC users will still need to go through menus to pair up.

Many of the digital picture frames on the market are a bit clunky, but the Specchio frame has a clever design, becoming a mirror when it is turned off and reverting back to being a photo frame when it is turned on. It allows users to share more than just photos, and can be used for transferring and displaying all sorts of visual information, including recipes, to-do lists, children's drawings or in fact anything that people want to share. Users can store up to 1,500 images.

Innovision's NFC tag is already integrated into Parrot's PARTY Black Edition speakers – which Parrot claims is the first commercialised speaker system to use NFC technology.

Wi-Fi and Bluetooth-enabled forklift PC

It has been a while since we have featured an industrialised PC, but the wireless capabilities of the new Intel Atom-powered vehicle mount JLT 1214 from rugged mobile computing company JLT caused us to pay attention.

Developed for forklift truck applications in warehouse and manufacturing environments, the JLT 1214 is said to be operation-ready straight out of the box. Incorporating WLAN, dual-diversity Wi-Fi antennas, Bluetooth connectivity, uninterruptible power supply and power stabilisation, JLT says that the device needs no further peripherals to get up and running as it plugs into the forklift power supply and is ready to go. In addition the device can withstand power outages of up to 10 minutes and can be swapped from one forklift to another as it can handle voltages from 9 to 72V DC.

The computer runs all standard MS Windows programs and connects with all Windows-supported hardware via an abundance of interfaces – 4 x USB and 1 RJ45 10/100-TP Ethernet connection.

So, a tough, wireless enabled PC to hang on your forklift. We're just a little surprised that some sort of RFID capability wasn't included, as we are led to believe that RFID is becoming more and more widely implemented for asset tracking and stock control within warehouses.

Perhaps that will be Mark II?

Wi-Fi / WLAN

Motorola shows VoWLAN smartphone

A new product suite from Motorola is aimed at providing Voice over WLAN services to interprise customers. The suite includes Windows Mobile-powered smartphones that are capable of making calls, sending and receiving corporate e-mails, as well as running applications. These handsets can only be used over wireless LANs, but Motorola said this enables them to be more efficient and have better voice quality. For example, users will be able to have up to four active voice sessions on the handset at one time, and it can use push-to-talk capabilities.

Making sense of wireless technology

by Dean Anthony Gratton

Stand in your kitchen and look around; switch off the lights (if you dare): what do you hear? Perhaps, the dim humming of the refrigerator and an irregular drip of a tap (damn, you now recall you should've replaced that washer a long-time ago!). But, what may escape you is the talking refrigerator incessantly bleeping you – informing you that the milk is low and you need to purchase some more cheese. Alas, the hearsay and foretelling of so many companies have yet to materialise. In fact, there are companies that still tout the premise of talking refrigerators and the need to turn your television and lights on from afar. Actually, the ability to use your mobile phone as some kind of wireless-overkill-enabled remote control to turn on your living room light may seem a little fruitless, although Sylvester and Tweety Pie (Looney Tunes) would love it, "I thwought I daw a light come on"! In reality, we would be so paranoid about the light actually working – we would inevitably over compensate this primary ability and install a webcam to ensure that the light is indeed illuminated!

In Making Sense of Wireless Technology we muse over the year past at Incisor, wholeheartedly endorsing a 'no regret' stance. No longer can we withdraw our outlandish revelations as, after all, what's done is done. We may recall a few laughs; shed a few tears and mostly stand agog and aghast, as some sensational 'shock-horror' announcement is made across the industry. Yes, let's embrace that old classic by Frank Sinatra with tears pricking our eyes and singing out aloud 'My Way'! For those that need a little Dutch courage, grab that glass of alcohol in one hand – raise it high holding it like a trophy and let's make a toast to all that played a part. Your other hand has formed a clenched

fist and you now poise it over your beating chest beaming with a warm feeling and knowledge that somewhere out there you've made a difference – you can now begin to slowdown and enjoy the imminent festive occasion.

Okay, that's enough of the cheese and biscuit platter. With this article reaching the Incisor December issue it seemed poignant to readdress the highs and lows of the year in the short-range industry. With Christmas unavoidably encroaching our view and the traditional high-street always decorating their windows prematurely, we take a cursory look at some of the stories that have made the front page.

Most clouds have a silver lining and for Incisor, Bluetooth wireless technology has lined most of our issues – whether it's been the front page or some other news snippet, Bluetooth has consistently appeared throughout the year. Bluetooth has evolved and sustained its growth with the automotive industry firmly in mind, along with a vying for the high-speed accolade. More recently, Bluetooth has also received some attention in its newly formed low energy offering with an emphasis on medical devices. Why not take a look back at Incisor's Low Energy – Still Flavour of the Month, August 2008 issue where CSR (the purveyor of all Bluetooth things) proclaimed its new low energy chipset (BlueCore7).

In fact, who can forget last year's CES exhibition and conference, where Bluetooth celebrated ten years, which was featured in Incisor's 10 Years of Bluetooth, February 2008 issue following the show. It seems that time passes so easily, as we can speculate about this year's show and begin to make next year's preparation. Incredibly, since its opulent and hyperbole-enriched formation, Bluetooth has since kept its feet firmly on the ground, achieving a continued success within the short-range arena. The Bluetooth Special Interest Group (SIG) has carefully steered this wireless-newbie into a modern day equivalent of an up-and-coming pop star! Notably, three common themes, which we've already touched upon, have graced the front pages of Incisor, namely automotive, low energy Bluetooth and high-speed Bluetooth. The latter theme has haunted Bluetooth over the year, as it steadily looks to embrace Ultra-wideband as the forerunner of its high-speed Bluetooth offering. The WiMedia Alliance and the Bluetooth SIG have chosen to ensure that these would-be cohabiting technologies work first time.

Haplessly, each headline seems surreptitiously intoned with a question: when will this happen? An answer that has remained elusive over the past year, but with last month's issue (Handset Companies Split Over High-speed, November 2008) we featured Bluetooth partnering with Wi-Fi, which may have left some of us surely breathless. Nonetheless, it's an intermediate step forward for Bluetooth, as it does allow the technology to offer high-speed connectivity for a yearning consumer-base. Incidentally, the speculation surrounding high-speed Bluetooth started as far back as early Spring with The Race for High-speed Bluetooth, March 2008!

'n' for 'never to be ratified'?

Wi-Fi has also been a common theme throughout the year. Of course, as we have already mentioned Bluetooth and Wi-Fi happily partnering to support greater data rates, but 802.11n has been somewhat contentious over the year. In 802.11n: Coming of Age, Incisor November's 2007 issue, we discussed the premature release of 802.11n in what the Institute of Electrical and Electronics Engineers (IEEE) and the Wi-Fi Alliance have coined Draft N. Most of us already know that "walking on water and developing software from a specification are easy if both are frozen" (Edward V. Berard). Nonetheless, with the impending ratification of the 802.11n specification next year, it will be one to watch, as many manufacturers have eagerly prepared silicon and software in the expected

ratified flavour – we can only hope that the IEEE aren't going to make too many last minute changes to their specification.

Similarly, Ultra-wideband has received some moderate press this year especially in the context of high-speed Bluetooth. It seems the WiMedia Alliance is ensuring that the technology's initial introduction to consumers will be the right experience – and rightly so. In other footnote news, Femtocells managed to squeeze into an Incisor issue back in April 2008 with Dissolving the Boundaries: Introducing Femtocells. Arguably, it was difficult to place Femtocell technology into the short-range domain, but when the device is situated on your living room wall then surely the radio madness doesn't have that far to travel!

Who remembers cash?

Near Field Communications (NFC) and RFID both have enjoyed a roller-coaster ride over the last year – in fact, the technology started the year off with an article that portrayed it as an enabler for other technologies, as seen in Incisor's Enabling Intuitive Connectivity using NFC, January 2008 issue, along with O2's announcement of O2 Wallet. Nevertheless, a notch on the proximity-based technology's belt would be the recent advertising campaign launched by Barclays (barclays.co.uk). We witness a man travelling along a water-filled tube that stretches several sky scrapers and reaches an, as yet, undefined destination. The bemused half-naked chap is seen purchasing some bananas using his Barclaycard, which is brought into proximity to a cashier's till.

Most oddly, it's not the fact that the guy has picked up some bananas half-naked – it's the cashier's nonchalant reaction to his impromptu presence that seems unrealistic, along with the numerous casual shoppers. Perhaps, there is an inconspicuous message here, as reflected in the cashier's oblivious demeanour to her half-naked water-driven customer, is the even more bare cheek of the underlying technology enabling this transaction – simply ingenious! Despite the recent positive press, NFC has suffered some poor press due to a collection of good-hearted researchers cracking the security and existing encryption schemes in a lab. Nonetheless, it hasn't stopped Barclays launching its Barclaycard OnePulse (barclaycard-onepulse.co.uk) where purchases can be made using Oyster technology. However, all transactions are limited to £10 and under, so we are hopefully void of headline news that someone has managed to snatch thousands of pounds from your savings account.

And not forgetting...

There are some technologies that have managed to escape our radar over the last year and alas, one such press-shy short-range wannabe has been ZigBee. Perhaps, partly due to the fact that well, nothing much has happened other than the occasional membership recruitment and some rudimentary partnerships (hey-ho). Anyway, it's Christmas, so filled with a little enthusiastic spirit let's give a big cheer to ZigBee, as Incisor's feature, which appeared in September 2008 (One Year On: Does ZigBee have the X-Factor?) introduced ZigBee to a life of cabaret entertainment and a rar-rar skirt (you really had to be there!). We take our readers' feedback seriously and, as such, we would like to comment that ZigBee will have to push back the inexorable recession and instead provide one of its best performances ever – we will be watching ZigBee carefully in 2009.

Whilst we are on the subject of low energy wireless, Z-Wave (Zensys: Veni, Vidi, Vici, August 2008) and EnOcean (as featured in One Year On: Does ZigBee have The X-Factor?, September 2008) have been common themes making guest appearances in several issues over the year. These technologies are vying for the low energy accolade and are now competing alongside Bluetooth low energy, as we saw in Bringing Bluetooth Low Energy to Reality (August 2008). For some time, both Z-Wave and EnOcean have been the technologies to beat in the low energy domain, but with Bluetooth also chasing the same dream, both Z-Wave and EnOcean will certainly have some challenging work ahead in the new year.

So, we have consolidated our view of the year past and have compressed the headliners into a single feature, but hopefully we have shared with you some of the exciting moments over the year and now we can look forward to more highs and lows in 2009.

In next month's issue

Next month, Dean has carefully prepared a wireless feast with the rawest and freshest of ingredients, all diligently selected from a soupçon of delectable and fervent technologies. A radio wave rippling selection of frequencies, which you will all be eager to get your hands on! So, abandon 'I'm a Celebrity- Get me Out of Here' and tune into next month's new seasonal menu at Incisor.tv – a look at the year ahead in 2009. Don't forget this New Year to leave some room for Incisor's Wireless PAN Seasonal Menu – a real treat for all the wireless-enabled family.

2008: While WPAN waits

By Fiona Thomson, Research Director, IMS Research

2008 - a year of "hard work" or of "unfulfilled promises"? I guess it depends on whether you are a 'key Bluetooth SIG member in the know' or a 'SIG member and keen observer of all things wireless'. At the Bluetooth Evolution Conference in October, a 'keen observer' asked "What had in fact been achieved in the last 12 months?"- a kick in the teeth for those 'in the know'.

I wonder if the Bluetooth SIG has spent the last 12 months trying to achieve the unachievable - keeping all its members happy. WLAN was added to high speed Bluetooth in February. By adding a variety of other technologies, Bluetooth seemed to be trying to take control of the WPAN future. However, at 2008 year end, confusion still reigns. Final decisions need to be made, made quickly, and made public.

And what of UWB in the high speed Bluetooth mix? Despite UWB having technical advantages, the 802.11 device market is much more mature. Although handset makers still support 802.11 strongly, their approach to high speed Bluetooth over UWB is "wait and see". The (WiMedia) UWB market as a whole seems in disarray; Intel and WiQuest have pulled the plug; and consolidation has arrived in force. More than likely, money and patience is running near empty. This was illustrated at Mobile World Congress 2008, when a UWB insider (who shall remain anonymous) commented, "If we don't sell millions of

WUSB ICs in 2008, we won't be here in 2009 for the Bluetooth SIG's decision to affect us".

As if this wasn't enough to keep the Bluetooth SIG busy, Bluetooth low energy wireless technology has been making big

strides through 2008. Luckily, progress has been relatively smooth so far. However, each device will have its own obstacles to overcome: What if the RF4CE (initiative for the next generation of remote controls) excludes Bluetooth low energy? What if Bluetooth-enabled watches remain a niche device?

So what will the New Year bring? Certainly the general economic outlook is bleaker than this time last year. Some research companies are optimistic, others pessimistic. IMS Research is keeping a close eye on all electronics markets and regularly updating its forecasts accordingly. In the view of IMS Research, realistically, 2009 still promises to be one of the busiest years in the history of Bluetooth and possibly the wireless industry. The pressure is on; can the Bluetooth SIG and its key members deliver on their promises?

Snippets   NFC / RFID

Bluehill ID to acquire Arygon Technologies

Bluehill ID has announced that it has entered into an agreement to acquire over

90% of RFID reader manufacturer Arygon Technologies. German company Arygon has been one of the pioneers in offering RFID reader products based on Near Field

Communication (NFC) technology. The transaction is expected to be completed by January 2009.

802.11n for mobiles
Speedy, efficient, and a thoroughly well-kept secret

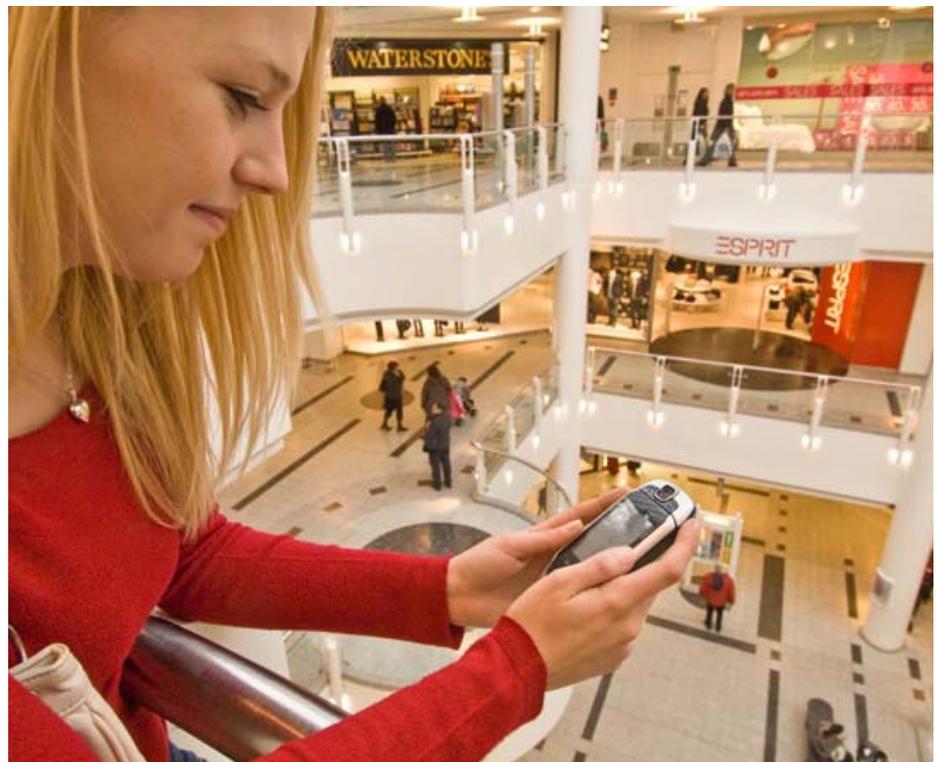By Richard Edgar, Product Manager for CSR's Wi-Fi Strategic Business Unit

I think by now most people have heard about 802.11n. It's not hard to see why the media has made such a noise about it.

For a while computer and mobile phone bandwidth requirements have been looking like they might overtake the speed Wi-Fi is able to offer. We're transferring larger and larger files; music, video, etc. People are also beginning to use several high-bandwidth applications at the same time. An individual might wish to stream video while talking on a VoIP phone, for example. With its 600MBit bandwidth potential, 802.11n promises to alleviate many of these issues.

What's odd is that we've heard far less about 802.11n for mobiles. When you think about it the trend for increasing data throughput applies as much to mobiles as to desktop computers. A modern phone, after all, can now be a media centre or, effectively, an office-in-your-pocket.

Wi-Fi solutions that have been tailored for mobile phone usage, like CSR's UniFi embedded Wi-Fi technology, are power-efficient, and reach up to 54Mbps, which is fine for most applications. However, future use cases are likely to demand even greater speeds. And as file sizes increase, the power-efficiency of existing Wi-Fi MB-for-MB, decreases.

The 'handheld profile' for 802.11n has been created to meet need for increased bandwidth. It's a fantastic technology, and one that I think needs bringing to public attention. Prior to CSR's UniFi technology, embedded Wi-Fi was a largely unknown concept: the industry had developed Wi-Fi for laptops and access points, and other mains powered devices. CSR identified that Wi-Fi had not been built around the notion of running a device from a small battery in a portable device. Where other vendors were attempting to crowbar smaller versions of their existing desktop Wi-Fi IP into portable applications, CSR decided to redesign Wi-Fi from the ground up, to create an entirely new breed of embedded Wi-Fi. CSR calls this UniFi.

So, how does the mobile variant of 802.11n differ? Most people in the industry know that regular 802.11n uses multiple antennae technology, (MIMO – Multiple In, Multiple Out). MIMO transmits multiple data streams via separate antennae on the same frequency. This is carried out through a technique known as Spatial Multiplexing.

People tend to think of MIMO as the defining feature of 802.11n. MIMO is fine for desktop PCs, access points, etc. But it's not ideal for mobiles due to the space and power it demands. The handheld profile therefore brings the advantages of 802.11n to mobile devices using just one antenna, and using much lower power.

'Regular' 802.11n uses the interference caused by nearby objects to reconstitute its separate data streams. Any two signals will take different paths, and may encounter different objects and interference levels, causing them to arrive at different times. The receiver uses this to distinguish each stream prior to recombination. This allows for up to 600Mbps transmission with four antennas, or 300Mbps with the more common two-antenna version.

While this technique isn't possible using a single antenna, 802.11n 'handheld' still manages to be substantially faster than a/b/g. The handheld profile does not rely on MIMO, but, like 'regular' 802.11n, uses clever coding and intelligent use of bandwidth.

Operating in a 40MHz range, 802.11n handheld will operate at speeds of up to 150Mbps, compared to 802.11g's 54Mbps. Even when operating within the same 20MHz range as 802.11g, 802.11n handheld will still be 25% faster, (at 72Mbps). This is due to its use of better 5/6 coding rates for 64-QAM. When you think about it, that's fairly impressive.

People occasionally point out that, with Wi-Fi in general, the speed advertised is not the actual speed you get. With 802.11g, for example, you generally get realistic data throughput speeds of about 50% of the airspeed due to protocol overheads. This is something that's been improved in 802.11n. With optional features like block acknowledgment and frame aggregation you can improve the data throughput of 802.11n to about 90% of the airspeed.

And whereas most versions of 802.11n technology are quite power-hungry, having been designed for desktop applications, like its initial approach to embedded Wi-Fi, CSR's 802.11n technology has been designed from the ground up for embedded applications. CSR has not simply adapted old desktop technology. Also, fewer antennae means fewer radios. Fewer radios means less power-drain. CSR has proven that its approach is more power-efficient than the competition.

And, of course, 802.11n handheld profile systems can communicate with devices that have either a single antenna, or multiple antennae. The handheld profile uses a clever technique known as Space Time Block Coding (STBC) to send several transmit chains over a single antenna. This also offers a more robust signal and better range than 802.11a/b/g solutions.

CSR will release its own 802.11n handheld chip in 2009. We predict that the public will fall over themselves for this technology – but only if it is power efficient. Having 802.11n in mobile phones will allow for faster mobile-to-mobile transfer. 802.11n is an extension of 802.11a, b and g, so it is a requirement that any 802.11n chip supports these standards. 802.11n handheld profile will therefore also be backwards-compatible with older Wi-Fi systems.

802.11n for mobiles is a fantastic technology. Given all the advantages that 802.11n handheld offers, I think now's the time for the industry to start shouting about it – as a different beast from the desktop variant.

sponsored contribution

wi-fi / wlan news

SMC Networks launches Wireless N portal

Incisor has used the word 'portal' recently in connection with the development of its web site. We felt very 'old' doing so – who says 'portal' these days? Well, it seems we are not alone after all.

SMC Networks, which says it is a provider of LAN hardware and broadband connectivity devices, has announced a Wireless N portal – http://wlan.smc.com. This online reference point is supposed to educate and promote the benefits of wireless connectivity in the home, SoHo and the SME environment.

The portal is said to 'outline the Wireless N standard', how it works and the advantages of wireless networking within the various spheres of IT deployment. Yes, guys, but there is already a glitch there - 802.11n isn't a standard yet ……

Sorry to keep mentioning that.

SMC claims that the portal uses simple terminology and visual diagrams, and is aimed at both the savvy technical engineer and the home user. The FAQs section on the portal further breaks down any technical jargon and industry wide standards in the realms of wireless technology.

But does it provide an answer to these FAQs:

- When will .11n get ratified and actually be a standard?

- What happens if the IEEE changes stuff when it does ratify .11n and my current products suddenly aren't compatible?

The answer, my friend, is blowin' in the wind, The answer is blowin' in the wind.

(Thanks, Bob).

Proxim experiences high demand for .11n

Proxim Wireless apparently booked orders for over 1,000 of its new 802.11n Access Points (APs), the ORiNOCO AP-8000 and AP-800, within the first week after product launch. Proxim believes demand at this level demonstrates the beginning of a shift in wireless architectures away from centralized WLANs, which it describes as costly and the reason for performance bottlenecks with the increased throughput of 802.11n. Proxim claims that its 802.11n solution is the first to achieve 320 Mbps of throughput with a dual-radio.

Proxim cited one installation as an example of how the market is transitioning. "We have had our 802.11g wireless network up and running now for 4 years, and though we've been hearing about the many benefits of upgrading to 802.11n over the last couple of years, the migration path has always seemed too daunting or expensive," said David Watson, Network Manager at Shoreline School District near Seattle, Washington. "With Proxim's 802.11n solution, however, we were able to replace our old APs with the new ORiNOCO AP-8000s in a snap because they use the existing mounting hardware and don't require an extra PoE cable like other solutions. We had everything up and running in a matter of hours."

Antenova adds dual-band Wi-Fi antenna

Antenna specialist Antenova has announced the addition of Mixtus dual-band 2.4 GHz and 5 GHz antenna to its gigaNOVA range of surface mount antennas. These are suited for a range of embedded Wi-Fi enabled consumer device applications such access points, set top boxes (STBs), portable games, media gateway products, networked High Definition Digital TVs (HDTVs) and PC cards.

"Antenova's Mixtus A10194 SMD antenna is a high efficiency dual-band 2.4 GHz and 5 GHz antenna suitable for Wi-Fi applications, including 802.11n multiple-input multiple-output (MIMO) applications," stated Greg McCray, CEO of Antenova. "Mixtus enables Wi-Fi products to operate over the full 2.4 GHz and 5 GHz bands, making it an ideal solution for current and next generation networked consumer products. This is of particular benefit for equipment manufacturers as consumer oriented networks evolve from mixed-mode systems to pure 802.11n systems."

uwb / wireless usb news

Staccato merges with Artimi

Well, we hinted at it in last month's issue of Incisor, and now we can confirm that the world of Ultra Wideband has changed a little more. Staccato Communications has completed a merger with Artimi, Inc.

It is not being described as such, but it seems that this is more of an acquisition than a merger, as Staccato has managed to raise $20 million in new round of funding, whereas we understand that Artimi had pretty much run out of money. Then consider that the organisation that will continue to trade post-merger will be called Staccato Communications.

Staccato suggests that the new capital injection will allow it to productize the portfolio of hardware and software solutions of the two companies, as well as continue the expansion of its roadmap. Investor participation included Allegis Capital, Amadeus Capital Partners, Bay Partners, Charles River Ventures, Formative Ventures, Intel Capital, Interwest Partners, Khosla Ventures, Noble Venture Finance, Oak Investment Partners and Vision Capital. All were investors in either Staccato or Artimi at the time of the merger.

Marty Colombatto will maintain the role of CEO for Staccato, and Andrew Vought, previously CEO of Artimi, will assume the role of COO.

Demonstrating that not every venture capitalist has gone running for the hills, Vinod Khosla, founder of Khosla Ventures commented: "The decision was easy to provide our strategic and financial support to this merger of complementary UWB companies. With a strong syndicate of investors, as well as the best-in-class hardware and software that the two companies bring, the industry will have a well-funded supplier with all the necessary elements to drive a high-volume market."

Andrew Vought, speaking now as COO of Staccato, added, "Staccato is an ideal partner for us as they are the only UWB company in the world that has a production-ready, single-chip CMOS solution that supports all the frequency band groups required for worldwide deployment. The fusion of their best-in-class Ripcord2 single-chip silicon with our best-in-class software and end product solutions creates an unbeatable combination."

Incisor is due to interview Marty Colombatto in connection with the merger, and so there will be a fuller report in our next issue.

… and unveils single-chip Wireless USB Host solution

As if merging with Artimi wasn't enough to keep it busy, Staccato has also unveiled a new addition to its Ripcord2 family that supports the PCI Express interface, and claims it is the first and only single-chip solution to achieve WiMedia PHY certification in Bands 1, 3 and 6.

The new SC4503 PCI Express (PCIe) Wireless Host Controller Interface (WHCI) solution for Wireless USB host applications is designed in 65nm CMOS technology, and implements a WiMedia MAC and PHY and a PCIe interface. Staccato describes the Ripcord2 WHCI Host offering as providing a worldwide-compatible solution in a single device and which delivers the performance required for host-side Wireless USB applications.

The SC4503 features a 5mm x 5mm package and Staccato also offers Ripcord2 WHCI reference designs in two form factors: a PCIe Half-Mini Card and PCIe Express Card/34. Each reference design includes all the necessary hardware, software, firmware, documentation and support.

Staccato's CEO, Marty Columbatto

commented: "As evidenced in the past with wireless technologies such as Bluetooth and Wi-Fi, meaningful market adoption does not occur until the underlying technology solutions are able to meet the strict market requirements of low-power, high-performance and low-cost. Our Ripcord2 WHCI solution provides the appropriate technology triggers to meet these demands for host-side Wireless USB applications, while also enabling OEMs to deploy a worldwide compatible product in a single SKU design."

Alereon powers IOGEAR Wireless USB

It's true – Wireless USB is getting out into the market! The latest to hit the retail shelves is IOGEAR's Wireless USB Hub and Adapter Kit (GUWH204KIT), which is powered by Alereon's AL5000 Worldwide Wireless USB Chipset.

Alereon told Incisor that the IOGEAR solution is the only available hub and adapter that can operate in WiMedia bandgroups one, three, four and six, meeting regulatory requirements via software configuration, and that it is the first product that can support full isochronous data transfers for audio and video applications. This apparently makes it the first product to support devices such as USB speakers and Webcams. Here at Incisor we are not sure about this, as we saw Icron's Extreme USB wireless solution doing this back in Q1 2007 (don't believe us? Here is the evidence – Incisor TV movie for Icron).

Whoever did it first (or got it onto retail shelves first, anyway), it is undoubtedly good news that some UWB products are going to be in the hands of consumer and business users. USB cables are great, but think about how much more handy it will be when we can routinely make the same type of super-convenient, high data rate connections between our gadgets and gizmos, without having to worry about whether we have the right cable.

uwb / wireless usb news

Cables Unlimited cuts cost of Wireless USB

Everybody knows that when technologies first hit the retail market, they are expensive. Hand-up, those of you that bought a plasma TV for $15,000 …. Well, this factor has hampered early take–up of Wireless USB hubs and dongles. That could be about to change. Cables Unlimited, a manufacturer and distributor of computer cables and accessories, has paired with UWB company Wisair to announce the availability of a Wireless USB Adapter Set that will retail for between $79-99 USD. The kit is apparently already available through multiple online retailers, including Amazon.com, Buy.com, TigerDirect.com, Staples.com, and retailers Fry's Electronics and CompUSA.

The adapter set consists of a pair of Wireless USB dongles, one for the notebook or PC and another for the device. The device-side adapter enables moving existing USB peripherals such as external hard drive, printer, digital still camera, camcorder cradles, and CD/DVD writers up to thirty feet away from the crowded desktop to more convenient locations in the room, eliminating the USB cable distance restrictions. The two companies point out that with this adapter set, users can economically upgrade their existing wired USB devices with Wireless USB, including turning a USB hub into a Wireless USB hub.

"It is exciting how much demand the Wireless USB Kit has already generated, since our launch several weeks ago. Many consumers are compelled to purchase this product as it brings them a true value priced solution to an innovative new technology, which is cable-free USB connectivity," noted Ben Hunter, Cables Unlimited CEO. "We chose Wisair's Wireless USB technology as the basis of our offering due to its superior wireless coverage and low cost. We will soon expand our offering to include single device adapters sold separately, so

consumers can wirelessly connect additional USB peripherals to the same PC."

Good work, guys - $79 may still be more expensive than a cable, but my desk area is a USB spaghetti nightmare. I'm on my way to the retailer's site now.

ProVision unveils in-home wireless HD video division

ProVision Communications, a wireless and HD video company based in Bristol, UK, has announced the establishment of a new division that will focus on HD video over wireless consumer products.

ProVision has been delivering products to broadcast operators and set top box manufacturers including Thomson, Pace, the BBC, and BSkyB since 2001. Recent developments have included real time video transmission over Wi-Fi to portable devices at outside broadcasting events, along with HD and wireless innovations for set top boxes and media home gateways.

ProVision told Incisor that its expertise lies in its end-to-end understanding of wireless networks and video systems, which includes MPEG4/H.264 Advanced Video Codecs, radio propagation, antenna design, wireless networking, and reliable interoperation between HD video and wireless standards. ProVision is now aiming to deliver its HD video networking products and technologies to cable and satellite TV operators.

To support the new division, Ian Walsh has been appointed as VP of business development, and commented, "With its unique combination of expertise in HD video, H.264 and streamed media along with 802.11, MIMO and RF propagation, ProVision has very compelling technology and exciting products. There is a big gap in the market for wireless distribution of HD

video around the home, so I am very much looking forward to introducing ProVision's products to the global market."

Staccato UWB already picking up CES 2009 gongs

Staccato Communications' Ripcord family of single-chip, all-CMOS solutions has been selected for the Best of Innovations Award in the Enabling Technologies category by the International Consumer Electronics Show (CES) Innovations Design and Engineering Awards. The company has also been named as a CES Innovations Design and Engineering Honoree.

The Innovations Design and Engineering Awards program recognizes the most innovative consumer electronics (CE) products in the industry's hottest product categories. Products entered in the program are judged by a panel of independent industrial designers, engineers and members of the trade press.

"We are honoured to be recognized with this prestigious award, which further validates our aggressive product strategy of single-chip all-CMOS design," said Marty Colombatto, CEO for Staccato Communications. "By pushing the boundaries of innovation with Ripcord2, we have been able to offer a fully integrated UWB solution in 65nm CMOS that meets the strict requirements of the market in terms of power, size, performance, system cost and worldwide operation. This recognition is also a testament to the value of UWB as low-power, high-speed, short-range wireless technology, of which we believe Ripcord2 will be a key market enabler."
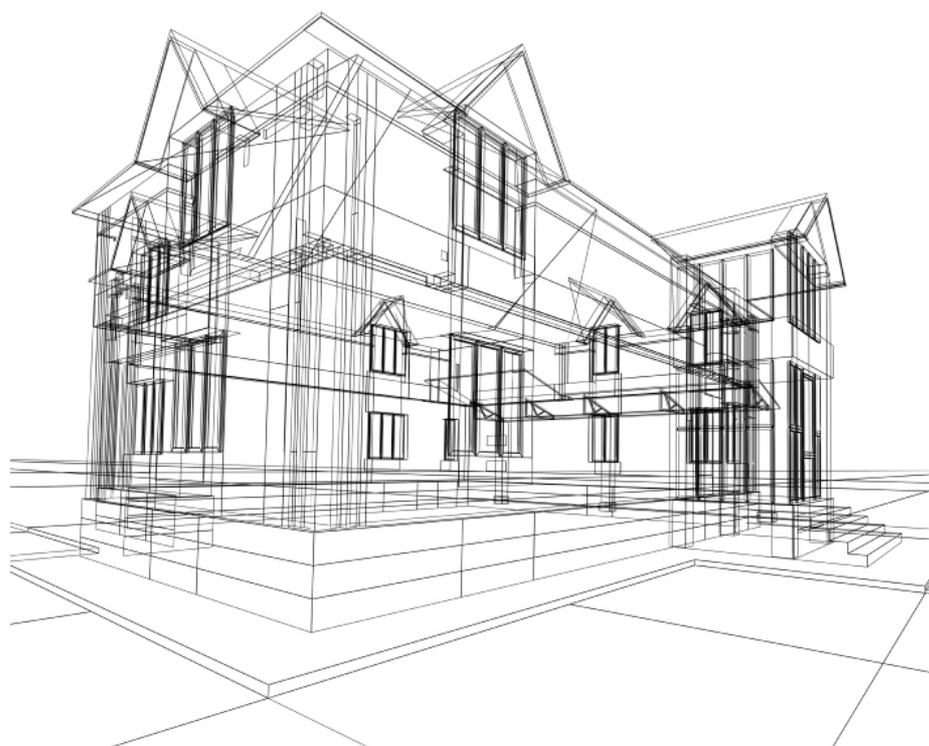
Nokia develops a smart home platform

We've been hearing for some time that home control systems – ways of switching your heating, lighting, ventilation and security systems on, off, up or down when you are not at home – are the next big thing. For technology platform developers and people like the ZigBee and EnOcean Alliances, maybe, but not too many people we know are losing sleep over their current inability to do this. So, some of the innovators have been looking at the idea, but now could be the time that some of the big names are getting ready to get in on the act. And perhaps that will wake consumers up to the idea.

Nokia, for example, is developing a smart home platform. The Nokia Home Control Center is described as the basis for next generation security, smart home solutions and household energy management systems.

Nokia isn't trying to 'own' the technology, and so the platform is open, allowing third parties to integrate their own smart home solutions and services; according to Nokia, the core consumer value of the platform is the plug and play experience across all solution areas with high security levels built in. All solutions based on the platform can be used through a smart phone or PC, locally or remotely.

"We see there is growth potential in the smart home market", said Teppo Paavola, Vice President, Head of Corporate Business Development at Nokia. "The home of today has intelligence everywhere, but to date there has not been a solution that is interoperable with the wide range of home systems that can easily be controlled. We want to create an open solution where external partners can develop their own solutions and services on top of our platform. We believe that the mobile device is an ideal interface to control home intelligence, especially when the user is not at home."

Nokia is partnering with one of Europe's biggest energy companies, RWE. The co-operation aims at developing a solution for managing energy consumption and CO_2 footage at home.

With this in mind, the first joint solution from Nokia and RWE, which is predicted to be rolled out late 2009, will focus on home heating management. The product consists of a central control unit together with remote-controlled thermostats for the actual radiator. The user interface will be the PC and/or the mobile phone. In addition, a separate display will be available, and presumably there will be a bunch of wireless sensors. RWE is also planning special offers combining these devices with new energy supply contracts. In a second step, Nokia and RWE are planning additional services in connection with smart meters beyond 2009. These services will provide consumers with real-time information about their energy consumption and allow them to control their energy bill remotely.

Inevitably, there will need to be other suppliers on board, and – equally inevitably – some have already jumped on the bandwagon. These include Danfoss, Delta Dore, Ensto, Meishar Immediate Community (MIC) and Zensys – the last of these known to Incisor readers for its wireless mesh networking technology. This could be a market with significant potential for Zensys, or EnOcean or one of the other technologies – ZigBee, Wavenis from Coronis Systems, etc.

Nokia Home Control Center will be part of Nokia's home offering. The company told Incisor that the solution is expected to become commercially available by the end of 2009. Nokia is a big company, but whether it has the reach to be able to establish a standard for home control systems remains to be seen.

low energy wireless news
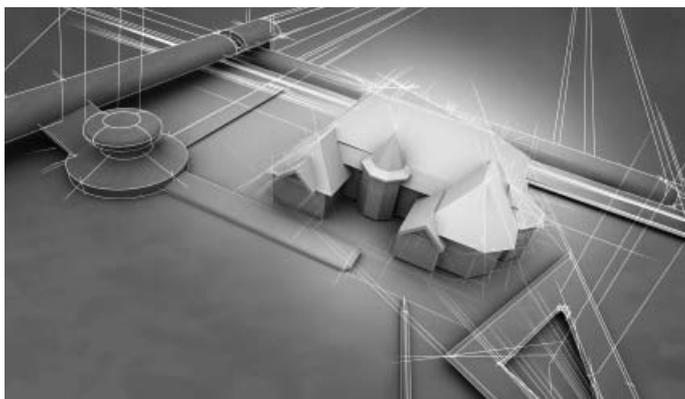
EnOcean launches Dolphin platform

Energy harvesting specialist EnOcean (featured in the Incisor editorial 'Does ZigBee have the X factor in issue 126) launched its Dolphin system architecture at electronica 2008 during November. Dolphin enables energy-autonomous actuators, bidirectional communication of sensors and routing concepts, and is intended to provide the backbone for a wide variety of new products and applications.

EnOcean told Incisor that Dolphin allows on-demand matching and continuous optimisation of central system features such as energy budget, peripheral functionalities and wireless communication. The length of wireless telegrams, for example, is minimised dynamically to the data content for transmission, and in programming only those software function blocks actually needed by the user are saved to memory.

New EnOcean modules based on the Dolphin system architecture enable bidirectional communication of energy-autonomous sensors. EnOcean claims that the bidirectional plug&play TCM 300 transceiver module for EnOcean wireless systems has half the standby power requirement compared to its predecessor (2.5 to 3.3 V, receiving approximately 30 mA and transmitting approximately 15 mA) cutting the costs for the power supply and reducing power consumption by around 50%.

In conjunction with the new modules, EnOcean is launching an operating system with an application programming interface (API) that allows application-specific programs to be written in high-level C language. In addition to the protocol stack for EnOcean wireless, the API offers functions for controlling energy management, use of digital or analog I/Os, access to flash memory and the continuously powered RAM0, and control of timer functions.

EnOcean has added the Dolphin Studio development environment to the API. This supports configuration of the various API modules. The command line program integrated in Dolphin Studio controls the programming operation.

... scores double victory at Elektra Awards 2008

Staying with EnOcean, the company was on the top step of the podium at the Elektra 2008 European Electronics Industry Awards held in Munich during November. The company received the Wireless & Telecoms Design Award for its self-powered wireless sensor modules and subsequently scooped the Company of the Year Award in recognition of its technology innovation and business success in the building automation market.

"This truly is a fantastic achievement for EnOcean and our energy-harvesting wireless technology," says Andreas Schneider, Executive Vice President and co-founder of EnOcean GmbH. "2008 has been a significant milestone in the development of EnOcean technology as the wireless standard in sustainable buildings across the world. Known as the Oscars of the electronics industry to many, becoming double Elektra Award winner means so much to our company and to the EnOcean Alliance."

New for 2008, the Wireless & Telecoms Design Award was open to companies or research organisations that could demonstrate how they have successfully applied component and software technologies in a wireless or telecoms product or application.

EnOcean's entry for its miniature, self-powered wireless sensor modules for maintenance-free monitoring and control in building automation applications was pronounced winner. The modules harvest energy resources from their surrounding environment – such as pressure, light, temperature change, rotation and vibration –

to transmit signals. This means that EnOcean sensors can work where other wireless technologies can't, which has benefits not only when a system is being installed, but also where ongoing maintenance is concerned – there are no batteries to need replacing, for example.

The Company of the Year Award was chosen from the winners of each of the individual categories. "EnOcean stood out its forward-thinking business professionalism and commitment to delivering world-class technology" said the judging panel.

Operators push handset vendors to integrate NFC

At a recent GSM Association (GSMA) event held in Macau, China, the mobile carrier community called for full NFC (Near Field Communication) capabilities in handsets from next year.

Under its Pay-Buy-Mobile initiative, the industry body is backing the implementation of the ETSI (European Telecommunications Standards Institute) -endorsed Single Wire Protocol standard, to provide the interface between the SIM card and the embedded NFC chipset within the handset. Pay-Buy-Mobile trials are currently underway across eight countries involving nine mobile operators, with further pilots planned across 14 countries by 15 mobile operators.

Industry analyst Juniper Research has commented that while the mobile payments market is currently dominated by purchases of digital content such as ringtones, music and games, it will in future be driven by users transferring money and using NFC to make purchases. The researcher said that mobile money transfer and NFC (Near Field Communications) transactions are predicted to account for 50 per cent of the global mobile payment market by 2013.

low energy wireless news

SIMalliance looks to NFC

SIMalliance, which, for those of us that didn't know it previously, is a global association made up of the world's SIM card manufacturers, has announced the creation of a Near Field Communications (NFC) Working Group.

The Group aims to be the catalyst to strengthen the central role of the SIM in the NFC ecosystem. Working with mobile operators, handset manufacturers and other value chain players such as banks, transport companies & retailers, the Working Group will highlight the value of the SIM and will support the established NFC sectors such as transportation and payment as well as encourage the development of new and innovative NFC services.

According to Pawel Chrobok, Chairman of the SIMalliance NFC Working Group, the first deliverable of the NFC Working Group will be an in-depth whitepaper covering NFC architecture, the technology road map and the ecosystem, giving detailed information about SIM based NFC versus embedded solutions. The Group will also actively approach key partners from the mobile network operator world, including the GSMA, application and hardware developers as well as Trusted Service Managers (TSM) and Standardization Committees to create a dedicated community to support the creation and delivery of SIM based NFC applications.

"We must promote SIM based NFC and its ability to increase Average Revenue Per User (ARPU) for mobile operators," said Chrobok. "To do so, we must clarify the stakeholders, and the vital role of the mobile operator, within the NFC community. We must also play a key role in bringing the ecosystem together, to develop important commercial and technical agreements between service providers and this community. The SIMalliance has a responsibility to take the lead on these issues and to advise new and established NFC players on the opportunities, and the commercial and technical realities of developing and deploying applications in this increasingly significant sector."

RFID embraced by Finnish fashion retailer

Finnish fashion company NP Collection has opened what it claims is one of the most advanced intelligent clothes stores in Hollola, Finland. In the new store, customers can try on clothes in intelligent changing rooms supported by RFID.

When trying on clothes, customers can use wall-mounted touch screens to browse additional product information, view suggestions for matching clothes and accessories and have alternative products or sizes brought straight to the changing room. NP Collection also uses a check-out system with RFID reading abilities to speed up the payment process.

RFID tags are attached to all NP Collection's products during manufacture, and data from the tags is read at several points all the way to the central warehouse. At the store, this data can be exploited to plan shelf-use in advance. As an added bonus, the RFID tags can also function as antitheft devices.

The RFID implementations are part of a development project started by NP Collection in 2007, and which covers the entire supply chain. The project aims to rationalize and intensify logistic processes and provide added value to customers by improving service levels.

The intelligent store concept will expand to St. Petersburg, Russia, during November, where NP Collection is opening a new clothes store equipped with smart Senso modules similar to those currently used in Hollola. During the next six months, the company will also implement a new, RFID-assisted Shop in Shop concept designed for use in NP Collection's retailers' premises.

events

DATE	EVENT	LOCATION	NOTES	LINK
Dec 9 -10 2008	Wireless Coexistence Summit	Hilton Santa Clara, California USA	Facing the challenges of combining multiple wireless technologies	http://www.imsconferences.com/wcs08/
2009				
Jan 8 - 11 2009	International Consumer Electronics Show	Las Vegas, Nevada, USA	-	www.cesweb.org
Feb 3 - 4 2009	DECT World & CAT-iq 2009	NH Barbizon Place, Amsterdam, Holland	The official event of the the DECT Forum	www.informatm.com
Feb 16 - 19 2009	Mobile World Congress	Fira de Barcelona, Spain	-	www.mobileworldcongress.com
April 1 - 3 2009	CTIA Wireless 2009	Las Vegas Convention Centre, Las Vegas, Nevada, USA	-	www.ctiawireless.com
April 27 - 28 2009	2009 International IEEE Conference on RFID	Orlando, Florida, USA	-	http://www.ieee-rfid.org/2009/index.html
Oct 7 - 9 2009	CTIA Wireless I.T. & Entertainment 2009	San Diego Convention Centre, San Diego, California, USA	-	www.ctiawireless.com

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