

INCISOR™

for the short
range connectivity
environment

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LOW ENERGY WIRELESS IN SPORTS AND FITNESS

THIS ISSUE

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BLUETOOTH SPECIAL INTEREST GROUP

CAMBRIDGE CONSULTANTS

NORDIC SEMICONDUCTOR :: ZIGBEE ALLIANCE

Upping the (wireless) game

Most of us are aware that it is good to be a little bit fit and healthy. Being a man of a certain age (ahem...), and one who spends large parts of his life sitting at a computer keyboard, I'm certainly conscious of this.

But staying fit and healthy is no box of doughnuts. No, in fact it's confounded hard work, and, yes, just a little bit boring once the initial novelty has worn off. What's needed, of course, is something to distract and entertain while we are going through our chosen form of agony and despair.

It is becoming apparent that one good scheme is to combine the exercise bit with that much more satisfying obsession – gadgetry. Fortunately, a whole industry has been growing that is keen to satisfy the needs of the sporty types that want to a) listen to music while they exercise b) extricate all sorts of apparently useful data and stats about what they are doing in the gym/on the street and c) finally outdo the gym smartass who always has to have the latest, constructed from teflon and titanium water bottle.

Now, wires don't work well in sports situations. They tend to get in the way and possibly threaten life and limb. Inevitably, then, the sports and fitness market is seen as an important revenue and growth opportunity by the promoters of various wireless techs. But which, actually, is the most suitable, and which will prevail over the others? This issue of Incisor includes a special focus on this market sector.

Oh, and a new wireless industry SIG has been born in the last month. The Weightless SIG for white space technology. The Incisor.TV cameras were at the launch event. You can see the movie we made by clicking on the screen below, or reading the story on page 22.

Vince Holton

Publisher & editor-in-chief, Incisor / IncisorTV

INCISORTV FOCUS THIS MONTH:



Incisor.TV records the creation of a new wireless industry special interest group, this one catering for white space radio technology.

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news

New logos create extensions to Bluetooth brand, aim is to build awareness for v4.0

The Bluetooth Special Interest Group (SIG) has announced two new extensions to the Bluetooth brand, which even its competitors would have to admit is spearheaded by a globally recognized logo. The SIG is now promoting the Bluetooth Smart Ready trademark and the Bluetooth Smart trademark. SIG spokespeople told Incisor that this is part of a major push to create consumer awareness around compatibility for new devices implementing Bluetooth v4.0.

When asked to define what makes a Bluetooth Smart Ready device, phones, tablets, PCs and TVs that sit at the centre of a consumer's connected world and implement a Bluetooth v4.0 dual mode radio were all identified. Bluetooth Smart devices are sensor-type devices like heart-rate monitors or pedometers that run on button-cell batteries and which were built to collect a specific piece of information. Bluetooth Smart devices include only a single-mode low energy Bluetooth v4.0 radio.

As you would expect, Bluetooth Smart Ready devices can connect to the billions of Bluetooth devices already in use today and also to the new Bluetooth Smart devices that are just starting to enter the market. Bluetooth Smart devices, due to their low power consumption, will only connect with products denoted with the Bluetooth Smart Ready mark, plus those designated specifically by product manufacturers.

Mike Foley, the Bluetooth SIG's executive director told us, "Here's the truth of the matter: Bluetooth Smart and Smart Ready devices will revolutionize the way we collect, share and use information. In order to ensure consumers know what these extraordinary devices have to offer, we created the Bluetooth Smart and Smart Ready marks. These new logos will help consumers manage compatibility, and encourage manufacturers to build their best Bluetooth devices yet."










Now, here at Incisor we've been sensing that consumer levels of awareness of Bluetooth have been reducing, not increasing, and so we wondered how the Bluetooth SIG intended to kick life back into the brand, and to build an understanding of what this brand extension is all about. Suke Jawanda, CMO of the Bluetooth SIG responded by saying, "Consumers can look at new Bluetooth Smart Ready devices the same way they would a 3D ready TV – having the TV is just the first part of the puzzle, you need glasses and content in order to really experience 3D. Once consumers have a Smart Ready device, like the new iPhone 4S, they can continue connecting to existing Bluetooth devices and are also ready to experience the new world of Bluetooth Smart peripheral devices that will carry the Bluetooth smart logo."

Not a bad analogy, but let's remember that even with hundreds of millions of cross-

industry marketing dollars thrown at it, even the much-vaunted 3D industry is struggling to win the hearts and minds of consumers, whether in the movie theatres or in the living room. It's probably going to take quite a push to get consumers thinking about the clever capabilities of Bluetooth Smart Ready and Bluetooth Smart devices.

Bluetooth has more of a chance of making this stick than – say – ANT has of becoming the predominant wireless technology of choice in the sports and fitness market (which, btw, is covered in some detail in this month's Incisor special feature). Bluetooth, unlike ANT, which has limited support from just one handset manufacturer, is already in the majority of phones – smart and otherwise – and, although slipping a little now, has enjoyed a lengthy period during which there have been high levels of consumer awareness. We don't necessarily think that a couple of new logos will drive the success of Bluetooth v4.0, but a lot of cool apps, working with some clever, nicely designed, wireless enabled products in not only the sports and fitness market, but also across other consumer-facing tech sectors, just might.

Especially if the Bluetooth community gets behind this, and there is some cross-industry enthusiasm to evangelise the technology. Just like there used to be in the early days...

If your product bears this logo...	It's compatible with products bearing any of these logos...
	  
	 
	

How to work out which Bluetooth products interoperate with which other Bluetooth products.



Sony to buy Ericsson's share of Sony Ericsson

We've wondered how long it would take, but now it has been confirmed that Sony is to acquire Ericsson's 50 percent stake in Sony Ericsson Mobile Communications AB ("Sony Ericsson"), making the mobile handset business a wholly-owned subsidiary of Sony.

The explanation given by Sony is that doing this will provide an opportunity to integrate smartphones into its array of network-connected consumer electronics devices – including tablets, televisions and personal computers – for the benefit of consumers and the growth of its business. Alongside this, the transaction provides Sony with an intellectual property (IP) cross-licensing agreement covering all products and services of Sony as well as ownership of five essential patent families relating to wireless handset technology.

As part of the transaction, and not unimportantly to Ericsson, the Swedish partner will receive a cash consideration of EUR 1.05 billion.

You don't often see negative statements in press releases, but in this case we did, as Ericsson admitted that the synergies for having both a technology and telecoms services portfolio and a handset operation are decreasing. Today Ericsson says that its focus is on the global wireless market as a whole; how wireless connectivity can benefit people, business and society beyond just phones.

Hans Vestberg, President and CEO of Ericsson told Incisor, "Ten years ago when we formed the joint venture, thereby combining Sony's consumer products knowledge with Ericsson's telecommunication technology expertise, it was a perfect match to drive the development of feature phones. Today we take an equally logical step as Sony acquires our stake in Sony Ericsson and makes it a part of its broad range of consumer devices.

We will now enhance our focus on enabling connectivity for all devices, using our R&D and industry leading patent portfolio to realize a truly connected world."

Sony Ericsson's sales (FY 2010) were EUR 6,294 million, and net income for the same period was EUR 90 million. The company has its headquarters in London and currently employs 7,500 people.

Recession? Nobody told Nordic

Ultra low power (ULP) RF specialist Nordic Semiconductor tells Incisor that despite the challenge of a tough global economic environment, it shipped its 500 millionth 2.4GHz ULP wireless chip during the summer.

Nordic has always concentrated on the license-free 2.4GHz and sub-1-GHz Industrial, Scientific and Medical (ISM) bands. During the 1990s it felt like Nordic was single-handedly pioneering the ULP wireless sector with its proprietary sub-1-GHz and 2.4GHz solutions, and – together with ANT Wireless of Cochrane, Canada – the first ANT+ interoperable connectivity solutions.

Nordic also claims that due in large part to its persistent efforts to continually develop, enhance, and expand the reach of ULP wireless, the Bluetooth Special Interest Group (SIG) incorporated Bluetooth low energy – an ultra low power wireless variant of classic Bluetooth wireless technology – as a hallmark feature in the latest version of the standard, the Bluetooth Core Specification Version 4.0.

In bullish mood, Geir Langeland, the company's Director of Sales & Marketing, told Incisor, "No company has spent more time specializing in ULP wireless than Nordic Semiconductor. This commitment has resulted in several generations of leading wireless connectivity solutions – each building on the previous technology – that

can run for months or even years from power sources as small as watch batteries. What marks Nordic's solutions out, however, is that this is achieved while meeting or exceeding customer expectations in terms of sophistication/features, performance, and price."

Neul strengthens its team with CFO appointment

White space pioneer Neul has announced the appointment of David Smyth as its Chief Financial Officer (CFO). Smyth joins Neul with over twenty years telecoms experience, and was one of the original senior management team at Orange. He joined the company two years pre-revenue and was responsible for its strategy, business planning and commercial development through its rapid growth years. Subsequently, as Director of Strategy and Investor Relations at Orange, he added IR to his responsibilities, helping the company through two IPOs and three large debt-funding rounds.

Most recently, Smyth was Group Finance Director for Macro 4 plc, where he managed all Finance, IR, HR, and IT activities and orchestrated the sale of the company at a 40% premium.

Commenting on the new appointment, Neul's CEO James Collier said: "At Neul we pride ourselves on the quality of our management team. We have been expanding our team since Neul was started in 2010, the market is growing, and we knew that this was the time to bring in a CFO with significant knowledge and experience of the industry."

"The similarities with the early years at Orange are clear. I am delighted to be part of the team and look forward to helping the company achieve its huge potential." Smyth added.



Car drivers shun handsfree solutions

A poll conducted by Ford in major European markets found that drivers continue to use handheld mobile phones, despite increased legislation aimed at curbing driver distraction. The survey of more than 4,300 drivers in Spain, Italy, France, Germany and Britain also showed that many European car drivers eat, drink, apply make-up, send text messages or even nap while driving a car.

The results underscored a growing driver distraction problem, with 47 pc of German motorists saying they have used handheld mobile phones while driving and 66 pc admitting to eating and drinking behind the wheel. In Italy, moreover, 43 pc said they drive with one hand, while 14 pc confirmed they have sent text messages while driving.

Though statistics generally support notions that driving is getting safer, European Union data showed that, in 2009, more than 1.5 million people were injured in road accidents across Europe.

Driver distraction is also a factor of growing importance because drivers increasingly want to have all infotainment features they have at home in the car as well. That means automakers are having to provide access to e-mail, text messaging, social networking and other online functions.

RivieraWaves qualifies baseband IP for dual mode Bluetooth v4.0

Incisor has learned that RivieraWaves has successfully passed the Bluetooth Qualification with its dual mode Bluetooth 4.0 baseband Intellectual Property (IP).

Ange Aznar, President and CEO of RivieraWaves, didn't hold back the enthusiasm,



"We have drastically improved our IP in terms of efficiency, power requirements and quality."

RivieraWaves has previously qualified its single mode Bluetooth low energy baseband IP and then, for its Bluetooth 3.0 baseband IP, both being now silicon proven by several customers. Aznar told Incisor that the new Bluetooth 4.0 baseband IP, compatible with the Bluetooth low energy and the classic BR/EDR Bluetooth specifications, is currently being integrated by several customers. The RivieraWaves Bluetooth IP portfolio also includes a complete Bluetooth 4.0 modem and radio transceiver IP. This IP portfolio is complemented by a set of Wi-Fi IP components, compliant with 802.11abg, 802.11n and Wi-Fi Direct.

The IP offering is composed of hardware, software and analog/RF components.

connectBlue shows Bluetooth v4.0 solution for blood banks

Swedish company connectBlue has announced a customer configured solution based on the new Bluetooth v4.0 standard. It's customer Tridentify will use the technology in a high-volume blood bank solution QTA Tracer System to be distributed in Sweden by Abbott.

Incisor caught up with Christian Strandberg, CEO of Tridentify, who told us, "Proper monitoring of blood products during storage can extend the useful life of this key component of healthcare. We need a robust Bluetooth low energy product for our blood bank solution."

Tridentify's QTA Tracer System is a patented solution that will decrease blood waste as well as increase blood availability, tracing possibilities and blood quality. In the Tridentify solution, the connectBlue Bluetooth low energy module provides the complete solution including battery and all of the necessary sensors to be encapsulated by Tridentify for the finished product. connectBlue is developing the application software for the Bluetooth low



energy module and Tridentify is developing the Bluetooth low energy computing gateway.

Bluetooth and ZigBee set to spur RF remote control market

After years of reliance on infrared technology to control consumer electronics devices, analysts at ABI Research believe that RF remote controls are finally taking off, with a market set to exceed 217 million devices in 2016. The market will be driven by standards including Bluetooth and ZigBee (RF4CE), plus proprietary solutions.

Jason Blackwell, practice director, digital home at ABI told Incisor that he believes that the technologies required to deploy RF remote controls on a wide basis are well-developed, but under-deployed. "RF4CE is seeing traction in the set-top box market, as service providers have begun trialling, and in some cases deploying, these remote controls. Bluetooth was assumed in the past to not have a strong fit in the remote control market, but we are seeing a good amount of activity in the CE space, especially televisions, for Bluetooth remote controls."

RF remote controls target a range of markets including televisions, Blu-ray disc players, set-top boxes, and digital media adapters, among others. The video game console market is leading the charge in RF adoption with all three current-generation platforms employing wireless controllers. Televisions are in the early stages of RF remote adoption with Panasonic, Samsung, and Vizio using Bluetooth for high-end models.

The adoption of Bluetooth may be driven by recent announcements from TV manufacturers that have chosen Bluetooth as the RF technology to support a new 3D glasses standard. There is one restricting factor, though, as ABI's group director Jeff Orr pointed out, "Profit margins in televisions are extremely low. If manufacturers are going to invest in a technology like RF, they must maximize the benefit and use it to its full potential."

Ford SYNC software update adds Bluetooth MAP for safer texting

Incisor readers will probably know that we consider Ford to be one of the most active in using wireless technology in its cars. On the first day of this year's Consumer Electronics Show in Las Vegas we filmed an interview with Paul Aldighieri, who is in charge of Ford's Global Human Machine Interfaces. You can watch the interview by clicking on the screen below. Ford is also blazing trails by letting owners of its cars update their infotainment systems with software downloads – and you thought you had enough to handle with managing updates to your phone and computer! Well, get used to the idea. And it's an ongoing thing. We learn that Ford has released its latest free SYNC software update, G1 V3.2.2, one of the aims of which is to give more SYNC users the ability to have text messages read aloud to them while driving.

Tailored for owners of select SYNC-equipped 2011 and early-release 2012 vehicles, the update includes the Bluetooth Message Access Profile (MAP), which is custom-made for the automotive hands-free environment and outlines a set of features and procedures used to exchange email, SMS and MMS between devices – in this case SYNC and the smartphone.

Last year, Ford announced it was voluntarily integrating MAP into SYNC for all 2011 MyFord Touch-equipped vehicles and is now extending the capability to the broader SYNC user community – with thousands of 2011 and 2012 vehicles equipped with the first generation SYNC system.

Mark Porter, supervisor of SYNC Product Development told Incisor, "A limited population of phones has the capability to work with the text message readback feature of SYNC. With our initial adoption of MAP for our latest generation of SYNC and our recent efforts to integrate it into our previous variations of the system, we hope we are setting an example that encourages more collaboration between Ford, the phone makers and the wireless industry to help drivers find smarter alternatives to hand-held texting while on the road."

Ford has a long history of working with the Bluetooth Special Interest Group (SIG), but both organisations recognise that MAP adoption by mobile device

manufacturers is still in its infancy, though the growth needle is starting to quiver.

Mike Foley, the Bluetooth SIG's executive director commented, "Texting is becoming a ubiquitous part of our day, so it stands to reason the remote message access profile is an essential addition for handsets, automobiles, headsets and aftermarket car kits. The Bluetooth MAP standard gives users the ability to simply and smartly manage incoming text messages from their vehicle while keeping their hands on the wheel and eyes on the road. We are seeing significant uptake in MAP adoption among phonemakers, in particular with recent qualifications from manufacturers such as HTC, RIM, Samsung and LG."

Yup, car owners do download software updates

Since SYNC launched in 2007, Ford has offered several software-based updates. And owners are apparently taking advantage, with Ford recording software downloads at www.syncmyride.com, ranging up to nearly 14,000 each month in 2011.

Major SYNC updates that have been released to date include:

- G1 V2.0 – availability of 911 Assist and Vehicle Health Report for 2008 SYNC-equipped vehicles (dealership installation required) (December 2008)

- G1 V3.0/V3.1 – availability of SYNC Services for Traffic, Directions and Information services for 2010 SYNC-equipped vehicles (June 2009)
- G1 V3.2 – improved voice command structure, constant display of turn-by-turn directions and GPS coordinates for 911 Assist for 2011 SYNC-equipped vehicles (April 2010)
- G1 V4.0 – AppLink software application for hands-free voice control of smartphone apps for the 2011 Ford Fiesta only (December 2010)
- G1 V3.2.2 (non-AppLink)/V4.0.2 (AppLink-equipped) – increased MAP support for select 2011 and early-release 2012 SYNC-equipped vehicles with AppLink such as Ford Mustang (May 2011)

Ford owners interested in finding out if their SYNC-equipped vehicle is eligible for any of the available SYNC updates can visit www.syncmyride.com and enter their Vehicle Identification Number (VIN). If eligible, owners can download the update to a USB memory stick and bring into their vehicle for installation through SYNC's USB port.

Incisor.TV will be at CES again in January, and we plan to visit Ford to see the latest additions to its in-car gadgetry.



Vince Holton talks to Ford's Paul Aldighieri as part of our coverage of CES 2011 (at 04:20)

new products

More Bluetooth v4.0 support with Motorola MOTOACTV

Timed conveniently to go public at the same time as Incisor's health and fitness special (it's probably just a coincidence, but thank you, Motorola), MOTOACTV is a new fitness device from Motorola Mobility. Seemingly keeping a foot in two camps, MOTOACTV supports both Bluetooth 4.0 and ANT+ wireless connectivity – suggesting that this provides compatibility with existing fitness sensors and your future ones

Described as a lightweight, wearable fitness performance tracker and smart music player in one, MOTOACTV can be synched with your PC, so you can check out the music you perform to best or track your workouts over extended time periods, set goals and even create workout competitions with your friends via the MOTOACTV Web Portal. And MOTOACTV features a touch-screen display so that launching a new workout or finding that one song you've been dying to hear can be simple (we'll judge this when we try it!).

Sanjay Jha, chairman and chief executive officer, Motorola Mobility told Incisor, "We brought the features you love in your smartphone to the fitness world with a groundbreaking addition, MOTOACTV. Workout smarter without using multiple devices or even wires, with the first multi-activity music and fitness tracking device with the brains to push you beyond your limits."

It's true that keen work-out junkies are obsessed with pace, number of calories burned, miles covered, personal records and fitness facts. MOTOACTV uses Motorola's AccuSense technology and GPS to ensure measurement accuracy of your performance. Your time, distance, speed, heart rate and calories burned are all measured.

Then, Motorola suggests that exercise ObComs can upload their workout to MOTOACTV.com to analyze the performance data tracked by the device. Motorola is providing charts, tools and programs that help you see your strengths and weaknesses. You can also get workout tips and training plans from fitness experts at MOTOACTV.com and on your Android-powered smartphone with Motorola's free mobile app available via Android Market.



This is also pre-installed on Motorola's DROID RAZR.

MOTOACTV can store up to 4,000 songs while tracking your moves. The smart music player learns what tracks motivate you most by measuring your performance against your music and then uses those songs to create your personal high-performance playlist. On those days when your automatically generated high-performance playlist isn't doing the trick, you can switch to FM radio.



MOTOACTV wristband.

You can choose the way you want to wear MOTOACTV: strap it on your wrist or arm, clip it to your shirt or mount it on your bike during an outdoor ride. And wherever you wear it, you'll need something to listen to your music and calls with. Talk to runners on the streets and you may find a few who disagree, but Motorola's view is that real athletes don't wear earbuds, they wear sports headphones. So, Motorola has also introduced a set of Bluetooth-enabled sports headphones with built-in heart rate monitors. The Motorola SF700 wireless headphones deliver real-time audible readouts of your heart rate allowing you to track your performance without what Motorola describes as 'the uncomfortable squeeze of a chest strap'.

MOTOACTV also gives you the option to stay connected to your Android-powered smartphone, so you can answer calls, receive texts and listen to music via your headphones.

MOTOACTV becomes available in US retail stores and online during November, while sales start in Europe and other territories during Q1 2012. The US MSRP for MOTOACTV 8GB is \$249 and \$299 for 16GB. The Motorola SF700 sports headphones are sold separately and will be \$149.

new products

Nokia blazes Bluetooth/ NFC pairing trail ... and tweaks Jabra's tail?

Yes, we know it is just another new phone, and another Bluetooth headset, and the phone is a Nokia running Symbian, too, and this is not some sexy new iPhone or Android smartphone superstar, but Nokia's new 603, which is described as an affordable, no compromise smartphone, does merit column inches here because it features single-tap pairing, sharing and tag reading with NFC. And the Luna Bluetooth headset completes the NFC-enabled easy pairing package. It's good to see Nokia continuing to innovate. Perhaps there is life in the old Finnish dog yet!



In Nokia's words, the Luna is described as 'daringly-designed'. We think daring is a good word to use, as the Luna looks a lot like a Jabra Stone – unless Nokia has done a deal with Jabra to OEM the Stone, the Jabra lawyers could be coming knocking at Nokia's door!. View the [Incisor.TV movie of the Jabra Stone here](#) and make your own minds up.

Representing not bad value for its EUR 200 price-tag, the Nokia 603 comes with most of the normal smartphone stuff such as the latest social networking games and apps, and the ability to capture, edit and share photographs, but is also preloaded with Maps. NFC functionality includes the ability to share content, pair with accessories like the Nokia Luna Bluetooth Headset, and unlock new experiences, such as unseen levels on Angry Birds.

And the headset? Well, the Nokia Luna Bluetooth Headset has the NFC pairing capability and is available in a range of

colours. Just like the Jabra Stone the headset features a pop-out earpiece for up to eight hours of extended talk. Nokia's Always Ready technology enables you to answer calls by popping out the earpiece, and end calls by placing the earpiece back in its cradle.



Nokia Luna Bluetooth headset.

It will be very interesting to see what type of response Nokia gets by providing NFC pairing opportunities to more people around the world. Incisor and a bunch of other people out there have campaigned for it for a long time. Let's hope that Nokia gets good feedback, adds it to more of its phones, and that other manufacturers follow Nokia's lead (remember when that used to happen ☺) and implements NFC pairing to the whole gamut of Bluetooth-enabled consumer devices.

The Nokia 603 is available in black and white with a choice of back covers in six different colours: black, white, fuchsia, green, yellow and blue. The Nokia Luna Bluetooth Headset, priced at EUR 69, is available in black, white, fuchsia, green and cyan. Both products are expected to start shipping in the fourth quarter of 2011.

Snippets

Leica Geosystems orders long-range Bluetooth from connectBlue

connectBlue has received a new order from Leica Geosystems, which develops

geodetic instruments used in engineering and construction environments. The order, valued at several hundred thousand Euro, is part of the roll-out of the long-range Bluetooth Serial Port Module

OBS433 into several Leica Geosystems high-end products. The Bluetooth Serial Port Module achieves its range of 1000 meters through high receiver sensitivity and output power.

The Global Solution for ZigBee

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- ZigBee Remote Control harness for both Target and Controller devices

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Incisor special focus

Wireless technology in sports and fitness

Everyone wants to play, but who is the fittest?

Low energy wireless technology is a topic on everyone's lips at the moment. Well, on the lips of (most) everyone involved with developing wireless technologies and related applications, anyway.

Some wireless technologies have had low energy solutions for some time – proprietary and often nameless technologies, but ZigBee has been working to make this space its own, and then there is ANT, and now we have potentially the biggest – Bluetooth has joined the party with V4.0, with its hallmark feature of Bluetooth low energy. Big guns such as Apple and Microsoft have leant their support to Bluetooth 4.0, with Apple including it in iPhones from this point forwards, and Microsoft providing native support in Windows 8.

But Bluetooth joining in doesn't mean game over for the others. ZigBee has a lot of history. ANT has a lot of ambition. Other players want to be part of the game.

In addition to industrial, automation, m2m and general back-room stuff, many are looking to apply low power wireless to consumer applications. The building blocks are starting to be put into place.

One of the key application areas for low

energy wireless technology in consumer applications is health and fitness, and that is the subject of this Incisor special feature. According to a recent InMedica report, unit sales of sports and running computers are forecast to double by 2014, and that is just one piece of kit. Sports and fitness fanatics love their gadgets, too, and there is an industry out there that is happy to service their needs. There's no doubt that dispensing with wires is a massive benefit when it comes to connecting devices around an active human body.

But which of the candidates is the most suitable? Will Bluetooth prevail? Does the work that either ZigBee or ANT has done give them an unassailable head start? Does the fact that ANT is a technology promoted by just one company severely limit its potential in a world apparently set upon the idea that cross-industry interoperability is a really, really good idea?

Incisor has set out here to find out. We've asked some key players to contribute, and our own Dean Gratton has applied his imitable style to creating an overview piece. We also threw the topic open by posting the question "The sports and fitness market - Bluetooth, ANT, ZigBee and others all want to play. Which is the fittest?" on various



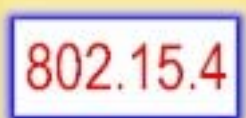
wireless groups on LinkedIn, and invited open discussion. The logos below provides links to the groups, and you can see the comments that have been made. It's clear there are some strong opinions!

If you want to contribute, it's not too late. This is an ongoing dialogue. Meantime, read on with the contributions on the following pages. The Bluetooth SIG in particular is getting feisty!

LinkedIn

Incisor extends across social media: LinkedIn focus groups focus on wireless in sports and fitness

Click on the LinkedIn group logos to access these discussions





Tim Whittaker,
Cambridge Consultants.

Sport, health and wellness - which standard is the fittest?

Tim Whittaker, System Architect
Cambridge Consultants

It's official. The race is over, the winner has been declared. The effects won't be overwhelming for a few months, or even a couple of years (Remember the hype about Bluetooth at CeBIT 2001 and how long it took for anything actually to happen?), but they will be eventually be pretty big.

Who's waved the big chequered flag? A press release from [Apple](#) on October 4th announced the iPhone 4S. Not only able to record video in 1080p high-definition (shame about the lens) but also incorporating Bluetooth 4.0. Lest there be any doubt what this meant, the Bluetooth SIG followed with their own [publicity](#), explaining that an integral part of Bluetooth 4.0 is Bluetooth Low Energy (BLE) which is well known to readers of these pages as the Johnny-come-lately standard following the footsteps of ZigBee, ANT+, ZWave and a bundle of other ultra-low-power wireless communications technologies all aiming to solve the problems of the world by converting it into an 'Internet of Things'.

The significance of Apple is clear, just as Nokia's promotion of Bluetooth audio was significant in building its popularity today. It means that as fast as they can sell them, there will be a ubiquitous and flexible platform that can form the other half of a whole gamut of what I'll call Hardware Apps. And because BLE is in iPhones, these hardware apps – heart rate monitors, clever pedometers, respirometers, home monitoring kit – will all use BLE. And that means that Nokiasoft and Googorola are following pretty fast with their own smartphone platforms, also with BLE.

So, will competitive solutions like ANT+ now be relegated to specialist niches (admittedly pretty good ones)? Probably, unless they can gain influence in high places with one of the big smartphone



players. ZigBee's health device profile didn't really offer advantages over the original (non BLE) Bluetooth version because it was based on the same IEEE 11073 connection-based model, so I'd expect ZigBee to retrench to smart energy and automation, where it maintains a good edge.

So, what's the game plan for a prospective hardware app vendor? First, you need a good idea, like [iDration](#) – the Bluetooth-enabled water bottle system that Cambridge Consultants showed at CES earlier this year. iDration shows operation of one of those buzz-phrase concepts, sensor fusion, but all done by a smartphone, a Bluetooth-enabled bottle, and sensors for heart-rate, motion, temperature and so on. If you are serious about training, you'll know the importance of correct hydration – neither too much nor too little – and this is a hardware app which helps you get it right, on the run.

As well as making and selling your hardware, you will need the iPhone app to operate it. And an Android version, and perhaps a Microsoft one too. Now BLE (and ANT+ and ZigBee) operate in so-called Profiles, which define message sets and device behaviours for particular applications. A vendor must implement all mandatory bits of a profile, and take them through a test and qualification process, to ensure that they will inter-work properly with other vendors' kit. What? Where's my unique selling point in iDration if I've got to support other water bottles? So I think that to make BLE even fitter, the smart-phone makers need to give us another way to get to the communications capability of their devices.

Here's my concern. I can now implement a BLE electronic thermometer, using a Health Thermometer Profile that the Bluetooth SIG has specified. These





Cambridge Consultants Blogs

Why are we blogging? We believe that the technology market is much better when it is highly connected, and social media is a fantastic tool that instantly connects people who face similar challenges, irrespective of whether they are budding entrepreneurs running their first high growth start up company or a captain of industry in charge of a global bluechip company. So, if you'd like to add to the debates, please feel free to comment on any of our blogs. It would be great to hear from you.



Patrick Pordage
Marketing
Communications
Director
Cambridge Consultants.

specifications take a while to develop, since they need consensus from a number of parties. If I want a Water Bottle Profile for iDration, I don't really want to add a year on to my time to market, letting all my competitors catch up. Then there's the problem that we all had with classic Bluetooth – the smartphones would only support a couple of Profiles – voice and dial-up networking, perhaps Obex – making it hard to add anything creative outside those constraints. Apple provided their Apple Accessory Protocol over Bluetooth, which was a step in the right direction, but needed all sorts of expensive add-ons like an Authentication Processor chip (which had to be bought from Apple!).

Now all BLE Profiles sit on a platform called the Generic Attribute Profile (GATT for short), so what we now need from the smartphone makers is a general-purpose

GATT API, so that I can just develop my iDevice software, and get my hardware app to market without delay.

www.cambridgeconsultants.com

With one of the largest independent wireless development teams in the world, Cambridge Consultants has a pedigree of creating 'world firsts' in wireless communications, including high performance health and wellness devices, single-chip radio transceivers, satellite communications, low-cost next generation cellular communications, and medical areas such as connected instruments, drug delivery and surgery. And we're certainly on this new wave of connected devices!

[Corporate Blog](#)

Our corporate blog covers new product development, open innovation, accelerating start up companies and other topics that involve using innovation to achieve market leadership, along with technology stories that we hope you will find interesting/

[Consumer Products Blog](#)

Topics include connected devices, beverage dispensing, eco innovation, new product introduction (NPI), open innovation, novel control interfaces and other topics related to our development of innovative consumer electronics, domestic appliances and fast moving consumer goods.

[Wireless Medical Blog](#)

Examining mobilehealth and telehealth technology ad market challenges, this blog provides insight from implantable and hospital communications to consumer health applications.

Snippets

TI introduces PurePath Wireless audio products with USB support

Texas Instruments has introduced two system-on-chip (SoC) solutions in the PurePath Wireless audio product family, aimed at delivering uncompressed, CD-quality wireless multichannel and multipoint audio streaming capabilities to consumer applications with USB ports, such as PCs, TVs, set top boxes, game consoles and more. The new single-chip CC8521 and

CC8531 solutions contain USB audio support for all major operating systems and can enable streaming of up to four simultaneous audio channels from one USB audio source. Together with a corresponding USB dongle reference design, TI claims that the new PurePath Wireless products allow developers to design low-cost, small USB dongles for wireless audio applications, without code development or in-depth understanding of USB protocols.



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Michael Foley, Ph.D.,
Bluetooth SIG.

Technology is changing sports & fitness – one Bluetooth chip at a time

By Michael Foley, Ph.D.,
Executive Director, Bluetooth SIG

At the Beijing Olympics in 2008, US swimmer Michael Phelps shattered world records, and he did it in style, wearing Speedo's newly developed LZR Racer suit. The suit was built using NASA technology and critics said it changed the face of the sport of swimming so much that it was banned from competition (Speedo later updated the suit and it is now worn again in swimming arenas worldwide).

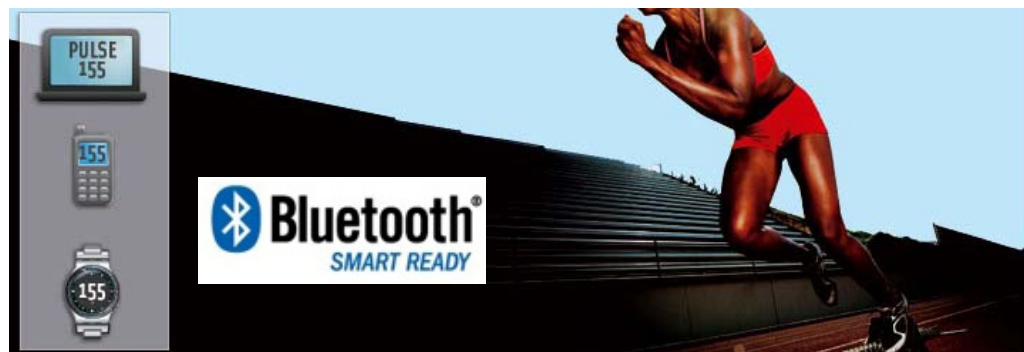
This fall, when professional football once again kicked off in the US, many players donned helmets that included the same type of technology found in cars to prevent injury in the case of a crash. These new helmets are expected to reduce the number of concussions suffered while playing America's pastime.

Technology has changed sports in the past. Bluetooth technology will do it again. But this time around, the change will not be limited to professional athletes with corporate sponsors and huge budgets to throw at innovation.

The typical recreational athlete, from softball player to mid-pack runner, participates in weekend tournaments (the Amateur Softball Association has over 230,000 teams with more than 3 million players) and races (just under 500,000 runners completed marathons in 2010) as a hobby, a competitive outlet and a way to stay healthy. They buy the best equipment they can afford in order to better their participation level.

Picture this: you're training for a marathon and your trainer wants to better understand how you're bearing your weight in order to maximize your pace. A sensor on your leg while you run can tell Coach which leg is bearing more stress, and you can adjust accordingly.

Or this: the school swim meet is coming up and the coach keeps pushing you to lengthen your stroke – but you have no idea how long it is in the first place. That is, until you strap on a wireless sensor that shoots that information over to your coach's tablet for analysis during practice.



Or perhaps: you want to knock it out of the park, but aren't quite sure how the ball is meeting the bat. A sensor buried deep within the softball bat could gauge the look of your swing, trajectory, or the location of the ball on impact to improve hitting and batting records. And pitchers could use balls with sensors to gauge speed, release location and ball rotation.

Bluetooth sensor technology changes the training game completely. And training changes the face of sport. Making corrections athletes – professional and the weekend warrior – could never really track before means faster, stronger, smarter competition. And safer: becoming aware of how the body is stressed and used during sport is an essential tool in staying injury free.

Analysts are predicting big things for Bluetooth technology in the sports & fitness arena. IMS Research forecasts over 60 million Bluetooth enabled sports, fitness and health monitoring devices will be shipped between 2010 and 2015. And that's just the devices they've already thought of – like heart rate monitors (expected to increase 60%), sports watches (expected to double), and running speed and distance monitors (another 60% increase). It's the opportunity for innovation in the field using Bluetooth technology that will drive in-market numbers to even greater heights.

Other wireless technologies have tried – are trying – to play in this space. They will not be successful.

ANT+, for example, can't do it, because:

- It's not open. The technology is owned by one company (Garmin) so the ANT+ Alliance is not a politically free organization. Companies looking to build products in the wireless technology space want a guarantee that their products can work with others (unless they are going the proprietary route – more on that below) and ANT+ can't give that to them.
- It's not installed. Yes, there are a handful of companies integrating ANT+ into their products, but it's not in the #1 consumer device – the mobile phone. And it never will be.
- It's not known. Consumers don't know ANT+. Consumers do know Bluetooth technology. They know how to pair, how to connect, how to share. They know Bluetooth technology is simple, secure, and everywhere. ANT+ is not any of those things.

Proprietary can't do it. Sure, using proprietary technology ensures your one product can work with your one other product, but that's not going to change the world. Consumers want affordable, usable, available options. Manufacturers want market share. Neither of these will be accomplished with proprietary technology.

And the biggest indicator to date that neither ANT+ nor proprietary will change the face of sports & fitness? Apple chose Bluetooth 4.0 for its latest iPhone evolution, the iPhone 4S. Microsoft chose Bluetooth 4.0 to support in its latest operating system, Windows 8. Those two companies can change the world. And so can Bluetooth technology.



Thomas Söderholm,
Nordic Semiconductor

ULP wireless: a perfect match for sports and fitness

By Thomas Söderholm, Business Development Manager,
Nordic Semiconductor

The sports & fitness market is a prime target for ultra low power (ULP) wireless connectivity because the technology's ability to run from single coin cell batteries fits well with the need to make sports & fitness monitors light and compact.

Monitoring heart rate, for example, is the perfect application for a technology optimised for infrequent communication (from a few times a second to once every several seconds) of messages just a few bits long. In a heart rate belt application using ULP transceivers to wirelessly connect to a sports watch for an hour a day, the battery could reasonably be expected to last for over a year.

The use of ULP wireless monitoring in the sports & fitness sector is rapidly expanding from one dominated by niche products for professional or serious amateur athletes, to one targeted at the mass market. To achieve this market shift, products must migrate from closed, proprietary technologies to interoperable ones that are able to communicate with the smartphones in everybody's pockets.

Fitness applications ('apps') are now readily available from the iTunes and Android smartphone ecosystems. Such apps offer the possibility to use the smartphone's powerful computational capability to display trends and predictions of performance improvements. However, until recently, inputs were typically limited to the handset's built-in accelerometer (which acted as a (relatively inaccurate) pedometer during walking or running). Consequently, such apps can't directly access information such as heart rate readings and therefore offer limited feedback on training progress.

Combining wireless sensors with fitness apps on smartphones would result in more accurate and deeper analysis of performance, and more comprehensive feedback. In addition, casual exercisers are likely to remain motivated during long-term training regimes because they would be able to check their progress at any time on the handset they carry everywhere and share the information with friends.



4iiii's Sport-iii's uses ANT wireless technology to inform fitness enthusiasts of how they're performing via a head-up display.

Until now, making connections from ULP sports & fitness monitors to a smartphone has not been generally possible because the wireless connectivity incorporated into almost every mobile handset has been incompatible with the wireless technology of the sensors. However, ANT and Bluetooth low energy wireless technology have begun to address that shortcoming.

ANT: An established alternative

ANT is a highly resource optimised RF protocol software - that runs on hardware such as Nordic Semiconductor's nRF24AP2 family of ULP transceivers - offering months or even years (depending on the duty cycle) of operation from a single coin cell battery.

ANT offers interoperability between products from different manufacturers through its ANT+ managed network technology. ANT+ assures device specific interoperability allowing seamless wireless communication with ANT+ products from the over 400 member companies in the ANT Alliance. The alliance is a special interest group of companies that has adopted the ANT+ promise of interoperability. The interoperability function (added to the base ANT protocol) assures the reliable transfer of data between sports & fitness sensors and display devices such as watches, heart rate monitors and bike computers.

ANT has a large installed base in the sports & fitness sector, particularly in a sector

where it is considered to be a de facto standard. ANT has already established a complete ecosystem of over 16 million ULP sport, fitness and health monitoring devices.

"ANT+ is a de facto standard for the cycling and fitness industry because it's perfect for the job," says Ian Andes, President of wireless sports equipment maker 4iiii. "The technology's ultra-low power consumption means the sensors can use small batteries and are hence compact and lightweight; this is critical to sportspeople because they want to absolutely minimize the weight they carry. And because there are over 400 members of the ANT Alliance, we're confident that we won't come across a wireless sensor with which Sport-iii's can't communicate."

Andes' company has developed Sport-iii's, a clever combination of wireless technology, electronics, LED indicators, and mechanics that can unobtrusively fit onto any commercial sunglasses. Sports-iii's uses ANT+, to communicate with sensors on the users bike such as speed & distance-, cadence- or heart rate-monitors.

A system of seven LEDs clearly indicates to the user how they're performing against desired training parameters. A central green LED indicates the user is working in the correct zone, and yellow, orange, and red indicators to the left and right record varying degrees of under- or over-performance.



ANT's established base has ensured its adoption by handset manufacturer Sony Ericsson. Courtesy of a Texas Instruments' (TI) WiLink multiprotocol chip, ANT is now a standard fitment on several of the phones in Sony Ericsson's Xperia range. For example, The Xperia active includes real time on-screen heart rate and pulse monitoring enabled by ANT+ wireless networking technology.

The handset comes pre-loaded with sports applications ('apps') that help users track their fitness levels. Owners can set their ideal training route using the built-in GPS, barometer, and compass, while the iMapMyFitness app monitors day-to-day performance. A built-in Facebook app allows consumers to share their progress with friends.

"We are absolutely thrilled to learn of this development," comments Thomas Embla Bonnerud, Product Manager for Ultra Low Power Wireless at Nordic Semiconductor. "This is fantastic news for all ANT+ supporters like Nordic, and for all end users of ANT+ solutions, because it means that ANT+ products will now be able to connect to cell phones in the future.

"This could not only dramatically expand the potential market and application potential of interoperable ANT+ ULP wireless products, but also makes Nordic's market-leading ANT/ANT+ chips – such as the nRF24AP2 – even more compelling for both new and existing customers."

Early applications for Bluetooth low energy

Compared with ANT, there are virtually no Bluetooth low energy and Bluetooth v4.0 chips in the marketplace yet. However, design engineers are working with samples and early products are starting to appear.

The Bluetooth low energy part of the Bluetooth v4.0 specification is optimized for devices requiring maximum battery life instead of a high data transfer rate, it consumes between 1 and 50 percent of the power of 'classic' Bluetooth technology. Bluetooth low energy devices will typically operate with low duty cycles, entering ULP idle and sleep modes, to wake up periodically for a communication "burst".

Nordic has been at the forefront of the group that defined the Bluetooth low energy specification since becoming a foundation member of Nokia's Wibree Alliance in 2006 (the alliance became part of the Bluetooth Special Interest Group (SIG) in June 2007). Nordic contributed decades of expertise – gained in producing successive generations of class-leading proprietary and interoperable (ANT/ANT+) ULP wireless connectivity solutions within a field it pioneered.



Nordic's μ Blue nRF8001 has been selected by Casio for its G-SHOCK Bluetooth low energy watch.

Japanese electronic products maker Casio has recently launched a Bluetooth low energy version of its G-SHOCK watch. The watch is able to wirelessly connect with a smartphone equipped with Bluetooth v4.0 and includes the following features: Time Correction from smartphone to watch (ensuring the watch always displays the correct time – anywhere in the world); Incoming Call, Email and SMS Alert notifications from smartphone to watch – including the ability to stop smartphone ring alerts from the watch; and a Finder Function that enables users to locate a misplaced phone by activating the alarm and vibration functions of their smartphone from a button-press on the watch.

The use of Nordic μ Blue™ nRF8001 Bluetooth low energy solution in the Casio watch enables the new watch to offer a similar battery life to a conventional Casio watch. The watch can run from a single conventional CR2032 coin-cell watch battery for up to two years, while providing up to 12-hours per day of continuous wireless communication with smartphones and other Bluetooth v4.0 devices.

The watch weighs a similar amount (65g) to a conventional Casio G-SHOCK watch, and has a similarly small casing size (53.2 x 50.0 x 18.3mm) – crucial requirements for a product designed to be comfortably worn by users for long periods.

"Bluetooth low energy opens the door to completely new ways of using watches as new applications are developed for smartphones," comments Etsuro Nakajima, Senior Manager within the Timepiece Division of Casio. "Although this will begin with allowing watches and smartphones to wirelessly communicate, our expectation is that over time a new category of watch product that we call 'smart watches' will evolve and be able to connect to the wireless networks of various kinds of devices that support Bluetooth low energy."

Dayton Industrial – a leading OEM/ODM

manufacturer of wireless monitors for global sports & fitness consumer brands – has announced the world's first production-ready Bluetooth low energy heart rate chest belt that's ready to go into volume production. The belt uses the same Nordic μ Blue™ nRF8001 Bluetooth low energy solution as Casio's watch.

"This is not only the first Bluetooth low energy product Dayton Industrial has developed but also the slimmest wireless heart-rate belt we have ever produced," comments Johnson Chan, Product Engineering Manager at Dayton. "We have partnered with Nordic Semiconductor for many years and will continue to do so as we roll out further brand new Bluetooth low energy sports & fitness product platforms in the future."

"Heart rate monitors are one of the first and most sought after use cases for Bluetooth low energy," says Geir Langeland, Nordic Semiconductor's Director of Sales & Marketing. "This Dayton product platform will now sit alongside established ANT+ interoperable heart rate belt products and other non-interoperable proprietary alternatives, and give consumers an even wider choice when it comes to monitoring their heart rate and so support an even more vibrant HR monitoring market with solutions for everyone."

Despite the early developments by Dayton Industrial and Casio, the potential of Bluetooth low energy as a technology to support sport and fitness applications won't truly be realised until the next generation of smartphones hits the market.

However the chips are now becoming available and it won't be long before these handsets are on the shelves. And when that happens, smartphones will form a wireless hub, taking data from sensors such as HRMs, and speed & distance footpods, analysing that data, providing tips and motivational tools and presenting trends and milestones via social networking applications to friends and family.

"It's taken a while for Bluetooth low energy to reach commercialization but Bluetooth v4.0 will extend this installed user base to new products enabled by Bluetooth Low Energy," says Svein-Egil Nielsen, Director of Emerging Technologies & Strategic Partnerships at Nordic Semiconductor and Board member of the Bluetooth SIG. "Now that the fully qualified silicon is reaching the market, expect a tsunami of Bluetooth low energy products to follow."

For more information on Nordic Semiconductor's ANT and μ Blue™ Bluetooth low energy solutions please visit www.nordicsemi.com.



Survival of the Fittest

by Dean Anthony Gratton

The race is on!

Well, I'm not sure if it's an actual race as such, as some contenders within this market sector seem to be still warming up and performing their obligatory stretching exercises. The small gathering of wireless technologies that are vying for the sports and fitness industry are all seemingly eager to reach their respective starting blocks. Perhaps the bookie's favourite is ANT Wireless. It has emerged as the favourite, since the technology has some exceptional experience and know-how on the track and field, with its technology already integrated into a wealth of sports and fitness devices. Likewise, ZigBee has some moderate experience too, but everyone seems to be threatened by Bluetooth low energy – a relative newcomer to the track, but with enough potential to leave the competition feeling somewhat daunted. Although, let's not forget that Bluetooth has yet to demonstrate its wireless acumen in a new playing field.

Place your bets now please...

There seems to be a little excitement over the prospect of the sports and fitness sector, as it does potentially open up a market for large volumes of silicon. The fitness fanatics out there are eager to track their ability to deliver, with a wealth of monitors and sensors all wirelessly sharing performance data within their body area network. Arguably, there are also the more power-hungry GPS capable devices that plot and track your speed, distance and direction. The harmonising of these devices offers the consumer the ability to monitor performance over a week or months when they sync their devices to their PC.

As usual there's the hasty jubilant snort, unnecessary puffing of the chest and some strutting their stuff prior to the race while the technologies all share testosterone fuelled glances. It's an ego thing and wireless technologies also have egos! The race that's underway isn't going to be a 100-meter dash – no, I think this is going



to be a race endured over several years and one which will ultimately see no winners or losers. Someone please call security! As I see some scuffles and the odd trouble-maker in the crowd, along with the booming heckling of the industry players who have already made their bets on a 'dead-cert'. What's more, it's likely to be a contest where we will see a technology that's stronger in one area and not so brilliant in another. Crikey, this is how we have witnessed wireless technology find its comfort zone – its area of competence, which it can excel at.

And the winner is...

I have been invited to offer my insight and I'm always asked who's going to win... I have been asked that question consistently over the 15 years or so that I have been working with wireless technology and, yet, the same technologies that allegedly competed in the early days are today still here performing their own respective applications. Honestly, if I'm asked that question one more time, I swear I'm going to go 'Douglas' (Falling Down, 1993).

I'm sure the inevitable debate will continue for a few more years where, ultimately the race as to whom will reach the winner's post will all be thankfully forgotten. Wi-Fi and Bluetooth were competitors in the early days, but we can now confidently place these technologies into the respective roles they serve. More so, I have seen some reports suggesting that Near Field Communications (NFC) and Bluetooth wireless technology are the modern day arch-enemies – someone

please spare me the painful anecdotes! Come on, these are two very different technologies.

The sports and fitness market doesn't need a 'one-wireless-technology-size-fits-all'

Anyway, in my experience, I honestly think there's a market share for all. Okay, maybe you're thinking that's just an easy cop-out, but I'll go back to my original anecdote – the technologies that competed 15 years ago are still here today with their own purpose and function within their market space they serve. And, whilst wireless technologies in the sports and fitness sector have their individual strengths and weaknesses, I'm confident that each will have their own role to play too. I don't see an overall champion or winner, if you like but, as I have already intimated, each will find their niche.

In short, there isn't going to be a 'one-wireless-technology-size-that-fits-all'. ANT Wireless already has a good start, but it will need to diversify its application use cases and become integrated into a whole lot more consumer electronic devices. I have seen some reports where ANT has been integrated into some mobile phones – it was Sony Ericsson, I recall. But it needs to seriously 'up' its game to stay ahead with aggressive campaigning from the Bluetooth camp. And speaking of Bluetooth: Bluetooth has already been integrated into a whole range of products and it seems a natural extension to the consumer-electronic portfolio to include the new v4.0 technology – Apple has apparently integrated v4.0 into the Apple iPhone 4S but, as yet, no-one can actually interrogate the product to unveil its true v4.0-like capabilities. ZigBee too needs to wrestle in and make some noises for it to be secured in the range of products, which is slowly happening.

Survival of the Fittest

I recall mentioning, in some previous features that the whole wireless industry is a little slow to react. Likewise, the industry has to win over the confidence of the



everyday consumer. A great many or, dare I say, the majority of consumers are already aware of Bluetooth and despite ANT's uptake in a host of existing products, Bluetooth may arguably favour better. But then again, ANT's previous track record, with a performance indicator that should be the envy of the competition, shows a high level of experience, along with established relationships with some big sportswear players!

Alas, it seems that the industry pundits are not happy until they see some blood, sweat and tears. I really don't see a blood bath in this market and, instead I would argue that an holistic partnership between the competing technologies can be established; each offering a specific and transparent role to the consumer. The fitness fanatic is simply seeking some gleeful performance data providing him with the confidence that he's on track to 'complete' fitness and, of course, while he's fiddling with his Bluetooth-enabled watch he doesn't see that proverbial bus coming around the corner as he jogs across the road...

Until next month ...

Last month was my birthday and I'm another year older – I know what you're thinking, I don't look it - I know, I know! I don't feel any different and I don't observe any additional wrinkles or grey hair. Perhaps I'm blessed with eternal good looks, or maybe it's down to the large quantities of red wine the wife and I gracefully quaff, which continues to preserve my youth – yes, I know it's a tenuous argument.

And finally, you'll see below that there's a wonderful advert from Pearson offering you an amazing discount on our (Sarah and I) new social media book, Zero to 100,000: Social Media Tips and Tricks for Small Businesses. The book is OUT NOW and this is a great opportunity to order it at a heavily discounted price. Did I mention it also makes a great Christmas gift?

So, this is where Dr G signs off this month and I'll catch you for next month's Incisor issue with a festive Christmas and New Year spirit!

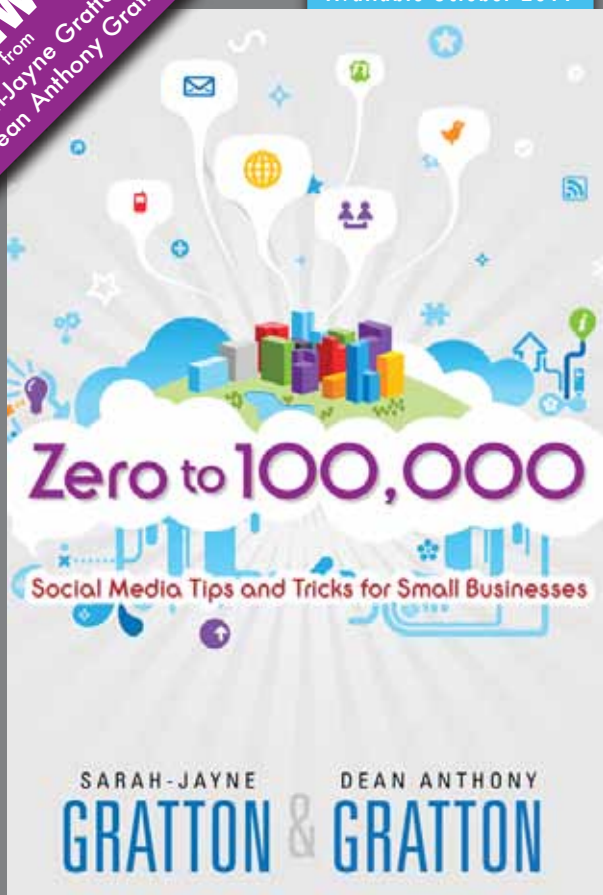
About the Author

Dr Dean Anthony Gratton is a bestselling author and columnist, and has worked extensively within the wireless telecommunications R&D industry. He was an Editor of the Specification of the Bluetooth System: Profiles, v1.1, participated in defining the initial Bluetooth Personal Area Networking profiles, and was active in the Near Field Communication technology and marketing committees. His wireless research work has been patented.

You can contact Dean at incisor@deangratton.com and follow him on Twitter (@grattonboy). Dean is an influential social media persona and was listed in the 50 "Top Dogs" of Twitter (bullsandbeavers.com). You can also read more about his work at deangratton.com.

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Ryan Maley, ZigBee Alliance.

ZigBee Health Care – secure sensing

Ryan Maley, vice president of strategy
ZigBee Alliance

The ZigBee Alliance created the ZigBee Health Care™ standard as a secure Assistive Technology that can be used anywhere in the world. It is designed with simplicity in mind, making it easy for athletes of all levels to securely monitor their fitness. While it can help athletes, it was also designed to be a comprehensive tool capable of helping people to maintain their independence and mobility. ZigBee Health Care is immune to most interference and extremely efficient in its use of power. So efficient, in fact, devices are capable of running on common batteries for years.

Health and fitness devices based on ZigBee Health Care benefit from the enormous economy of scale benefits for components, while offering an unprecedented ability to simplify the control and monitoring of people in gyms, hospitals, care facilities and even homes.

ZigBee Health Care is ideal for athletes wanting to track their fitness level and progress made during training sessions. It's also designed to act as a low-power wireless local area network, allowing gymnasiums, rehab centers and homes to securely collect or transmit fitness performance data. Since there are typically a number of parameters that individuals monitor and record as they perform their workout routine, ZigBee Health Care can perform a number of these measurements automatically. For example, while running on a treadmill, an individual can monitor his/her heart rate, temperature and blood oxygen level. In this case, ZigBee Health Care devices poll each sensor type at a different rate. The temperature sensor could be polled at two to four times a minute, while the pulse monitor checks twice per second. The strength and speed of ZigBee nearly eliminates any latency issues, so data is collected securely without delay.

Athletes and trainers often develop customized fitness schedules for competitions or other intensive athletic activities. In the case of marathon training, a personalized fitness schedule could include running on a treadmill as part of the athlete's intensive training. For each training



day, the trainer schedules the distance, the pace, and the maximum heart rate at which the athlete is to train. The trainer would want information on the athlete's respiration pattern. While the distance and the pace are provided by the treadmill, the heart rate and the respiration are securely monitored by wireless medical devices worn by the athlete. If the heart rate spikes to a value that is higher than desired by the schedule, the fitness sensor securely communicates directly with the treadmill to reduce the workout gradually until the heart rate lowers and meets the target rate. Alternatively, the fitness sensor could send an alarm to the gateway, letting the gateway record the alarm and also adjust the treadmill's control.

This information, obtained from fitness sensors worn by the athlete, is securely streamed to a gateway or collection data unit and also displayed on the treadmill's console in real time. The gateway sends the information to a database used by the athlete for tracking historical fitness data. The fitness information can be sent in real time or simply collected and securely transmitted after each training session ends. This lets athletes review their performance history and even share it with their trainer.

ZigBee Health Care supports all IEEE 11073 devices, providing a wide variety of devices that gives the average consumer, or professional athletes, the ability to create

basic or intricate health and fitness programs:

Glucose Meter - Measure the approximate concentration of glucose in the blood at various times per day or even continuously.

Pulse Oximeter - Continuously measures the amount of oxygen in a blood at user defined intervals.

Electrocardiograph (ECG) - Records and measures the electrical activity of the heart at user defined intervals.

Social Alarm Devices - When an emergency occurs, including fall detection, an athlete requests help or help is summoned automatically. Two-way voice communication helps resolve the emergency.

The missing piece of the health and fitness puzzle has been secure wireless connectivity with low power. Low power devices preserve personal mobility, allowing sensing and monitoring devices to function continuously. This helps athletes focus on their training and not worry about recharging their devices or wondering who else might be capturing their health information. Plus, the ability to wirelessly and automatically store fitness performance data is a necessity required for any athlete following a strict training program.

ZigBee Health Care creates a truly scalable network of low-power wireless devices specifically designed to sense and securely monitor the health and well being of individuals everywhere. It leverages the inherent traits of ZigBee such as very low power use, flexible network topologies, data communication security, and wireless license-free bandwidth publically available everywhere in the world. Additionally, a robust ecosystem of technology suppliers and product manufacturers that ensure a consistent supply of parts and strong competition creates the economies of scale needed to support secure wireless sensing and monitoring for health and fitness.

www.zigbee.org

ALL NEW WIRELESS EXPERIENCES

Must-have Bluetooth accessories for Smartphones

Clipcomm has released two new products, the Music Link ML-D100 and ML-E100K. These products feature Bluetooth wireless technology and support A2DP music streaming in a compact size.

ML-D100

Plug in the ML-D100 and play music from your Smartphone to any iPod docking speakers wirelessly.

- Bluetooth 2.1 compatible
- Supports A2DP, AVRCP profiles
- Class2 Bluetooth radio, approximately 10 meters coverage
- Dimensions : 40mm x 25mm x 6mm



ML-E100K

ML-E100K consists of a Bluetooth music receiver called the ML-E100 and an external battery pack, ML-E100B. The ML-E100 enables wireless music transmission from your Smartphone to your legacy earset, while the ML-E100B charges the ML-E100 and Smartphone via its built-in stereojack or slide-out micro USB plug, respectively.

ML-E100

- Bluetooth 2.1 + EDR
- Supports A2DP, AVRCP, HFP profiles
- Class 2 Bluetooth radio, 10 meters coverage approximately
- Up to 2.5 hours music playing time and up to 2days standby time

ML-E100B

- Battery capacity/type : 1030mAh, lithium-ion polymer
- Dimensions/Weight : 62mm(L) x 39mm(W) x 18mm(H), 44grams
- Operating temperature : 0~45 °C
- Charging receptacle for ML-E100B : micro USB



Incisor interview

Vince Holton talks to Jakob Hjelmåker, Bluetooth Business Manager at Mecel



Jakob Hjelmåker.

VH: It's now a little over two years ago since we last featured Mecel in Incisor. What has happened in that time?

JH: Last time we had just introduced our dedicated Bluetooth software product for the automotive industry – the Mecel Betula SDK. Today we are very excited that the product can now be found in a variety of vehicles. US, European and Asian OEM's, passenger cars as well as commercial vehicles, hardware modules and processors with pre-packaged software components, consumer devices meant for automotive usage – the mix is exciting and the outcome of last year's promotional activities has been very encouraging.

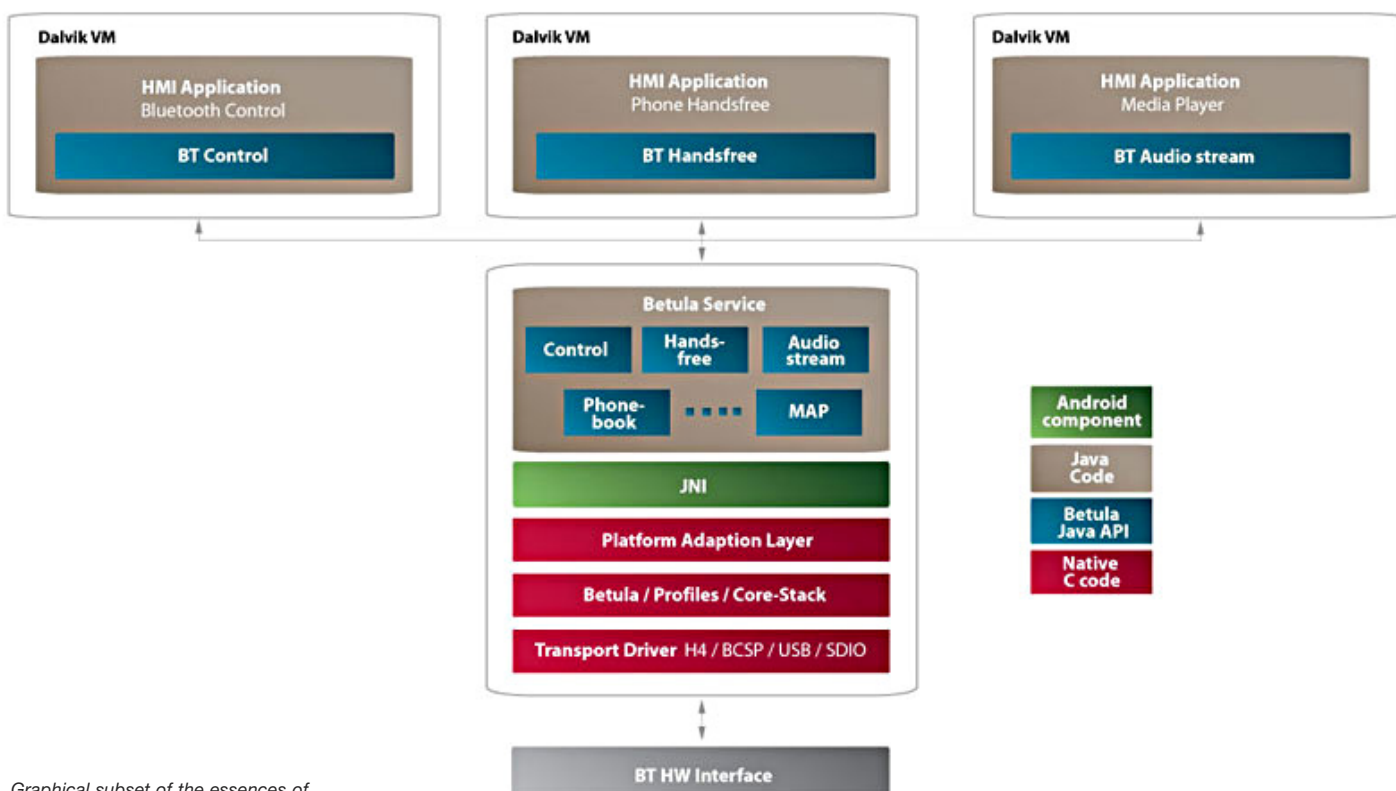
VH: What trends do you see in terms of operating systems used in automotive oriented products?

JH: Most of our recent projects are running on Linux, but we have also developed an Android version of the Mecel Betula SDK, which will go into production in several products next year.

With obvious feature similarities between tablets/mobile phones and advanced head units, it has become natural to explore Android in vehicle entertainment systems. However, some default Android components need adjustments or replacements for their role in the vehicle.

Bluetooth is perhaps the most concrete example, since the default solution is primarily designed as a phone component, with a lack of key profiles for vehicle use cases.

So when our customer came to us with a need to get a full automotive grade Bluetooth solution on Android, we were thrilled to take on the challenge and convert the high level Betula API's to Java format. What started as a demonstrator on a mobile phone a year ago will soon be available in cars coming off the production line. That's quite a journey and a product enhancement our engineers really enjoyed working on.



Graphical subset of the essences of Mecel Betula SDK Android design.

We're hearing of more and more interest around Android in automotive environments, and we believe that Betula on Android will be one of our most popular versions in the coming years.

Mecel has also been very active in GENIVI discussions (GENIVI is the Linux-based operating system, middleware and platform for the automotive in-vehicle infotainment (IVI) industry). Similar to Android, the platform could be enhanced by a commercial Bluetooth stack, and Mecel has been the driving stack supplier for such an option. A proof-of-concept study has just been finalized, where we successfully demonstrated how Betula could be used together with components such as PulseAudio, Connman and Ofono. In a recent GENIVI meeting in San Jose, California, it was decided that either commercial or open source solutions could be used through a common API. Just like the Android version of Betula, we expect to have a high take-up of our GENIVI implementation in the future.

VH: How about Low Energy, do you see that coming into vehicles as well?

JH: Most likely. It seems that the OEMs are perfecting the use cases for Bluetooth 4.0 at the moment. But I guess it's no secret that the technology would be suitable for key fobs, sensors inside the vehicle or why not as an interface from the phone to the vehicle, for enabling personal settings etc. I expect

that we will see a lot of requirements in the future for dual-mode head units.

Otherwise we are, of course, getting interest from the non-automotive industry, and it seems that Low Energy is finally taking off next year!

VH: You talk to a lot of companies in the industry. What else do you see going on in the market?

JH: When we started to develop our Bluetooth stack back in 1999, we had to create our own test tool for verification of the profiles and protocols that were developed. There were no tools available on the market that had such capabilities, and there are still gaps. We named the tool that we created MecApp, and started to distribute it to all possible stakeholders within the Bluetooth industry - such as phone manufacturers, automotive Tier1s and OEMs. Earlier this year we finalized our Low Energy implementation and then decided to create an enhanced version of MecApp, adding support for Low Energy and additional logging capabilities. The tool has now been renamed MecApp Pro, and it has already been purchased by leading players within the Bluetooth industry. The intention is to add support for automatic testing through scripts during 2012, and to make sure that MecApp Pro continues to be a great help in designing next generation Bluetooth devices.

www.mecel.se

Snippets

Low power wireless

NFC chip shipments to pass 1.2 Billion by 2015,says In-Stat

As the number of mobile payment users grows to over 375 million in 2015, the demand for devices with near field communications (NFC), the underlying

communications technology behind many mobile payment solutions, grows as well. New research from In-Stat forecasts that adoption of this technology will push global annual shipments of NFC chips to over 1.2 billion by 2015.

Nordic and AKM Semiconductor launch two-microphone wireless audio RDK

Nordic Semiconductor and digital audio converter specialist AKM Semiconductor have announced the nRFready Microphone reference design kit that provides a complete two-microphone audio streaming

solution based on the recently announced Nordic nRF2460 2.4GHz mono audio streamer and AKM ADC/DAC audio converters. The solution delivers wireless 16-bit uncompressed audio with less than 22ms latency, over 100-hours of battery lifetime from two AA batteries, and a total BoM (Bill of Material) that supports competitive consumer product pricing.

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.

Click on the links below to watch recent Incisor TV presentations

[Neul whitespace launch event](#)

[Bluetooth SIG All Hands, Mike Foley keynote](#)

[Bluetooth SIG AHM, Bluetooth Ecosystem teams](#)

[Bluetooth SIG AHM, Board of Directors panel](#)

[IncisorTV at CES 2011 – Bluetooth Best of CES](#)

[IncisorTV at CES 2011 – Day 2](#)

[IncisorTV at CES 2011 – Day 1](#)

[Rococo discusses LocalSocial](#)

[Bluetooth High Speed Technology](#)

[Frontline – Interoperability testing](#)

[Bluetooth SIG BETS programme](#)

[Frontline – BPA500 protocol analyser](#)

[Aftermarket Bluetooth versus Factory fit](#)

[Who needs stress? Says Jabra](#)

[EnOcean Alliance – energy harvesting technology](#)

[Aftermarket Bluetooth versus factory fit](#)

[Bluetooth 2010 All Hands Meeting](#)

[Anoto - 10 years of digital pen and paper](#)

[BiteBack Sweden](#)

[CES 2010 Daily Show report – Day 1](#)

[CES 2010 Daily Show report – Day 1](#)

[CES 2010 Daily Show report – Day 1](#)

[BiteBack Asia](#)

[BiteBack USA](#)

[BitBack UK](#)

[IncisorTV commercial for CSR/SiRF merger](#)

[DECT Forum and CAT-iq in 2009](#)

[Bluetooth SIG – Best of CES 2009](#)

[WiMedia Alliance – UWB in 2009](#)

[Incisor showreel](#)

[WiMedia special - UWB - a high performance solution / part 1](#)

[WiMedia special - UWB - a high performance solution / part 2](#)

[WiMedia special - WiMedia and Bluetooth](#)

[WiMedia special - Updating the WiMedia roadmap](#)

[WiMedia - The future for UWB](#)

[Bluetooth low energy wireless technology](#)

[IncisorTV commercial for CSR – BlueCore7](#)

[IncisorTV commercial for CSR RoadTunes](#)

[IncisorTV commercial for CSR BlueCore Player](#)

[A guide to Bluetooth Version 2.1 + EDR](#)

[10 years of Bluetooth / Best Bluetooth of CES 2008](#)

Dawn of a new SIG

Weightless Special Interest Group forms for white space technology

It's not often that a new Special Interest Group (SIG) or Alliance appears, and the effort involved in creating such an organisation – and keeping it working and on track once it has been formed – means the protagonists have to be serious about the venture.

Some SIGs, alliances or forums grow very big: the Bluetooth SIG has more than 14,000 members now. This is outstanding and far exceeds the number of members signed-up by its contemporaries. Even the Wi-Fi Alliance only has 400 members, while others, such as the ZigBee Alliance, the DECT Forum and the NFC Forum achieve much smaller numbers and seem to get stuck at a certain level – 'approximately 400', 48 and 150 respectively for each of those three organisations.

Incisor readers will have noticed that we have been tracking developments in the white space sector, so when news came to us that a group of companies was setting up a SIG, we knew we had to see what was going on.

We took our cameras to Cambridge, and filmed the launch event for the new SIG, which is to be called Weightless. The location for the event was decided, presumably, by the convenience factor. The main protagonist in this venture is Neul, the company established by former founders of one-time Bluetooth industry giant CSR. Now, Neul is based in Cambridge, and so is at least one other company that participated on the day. The companies, which we will refer to as the promoter group, leaned on the services of Cambridge Wireless, the (Cambridge-based – big surprise) networking and SIG management organisation.

The actual membership of the Weightless SIG promoter group is a bit sketchy at the moment. Presenting on the day were Neul, ARM, Cable and Wireless and two rivals from the smart metering industry, Itron and Landis + Gyr. At a pre-launch event



Click on the screen to watch the Incisor.TV movie of the Weightless SIG launch

that Incisor was invited to, BT was also participating.

Once the initial group gets its signatures on the membership documents, we also understand that a second raft of companies is looking to come on board at the promoter group level. These will include some very big names.

Regardless of the less than concrete foundation of the SIG's management structure, the launch event certainly attracted plenty of attention, and we were told that there were more applications for places at the event than there were seats available. This does seem to affirm that there is significant interest in the potential for white space communications networks.

Certainly, the promoter group spokespersons that presented in Cambridge were all saying the right things. There was a great deal of focus on the smart meter market as one of the initial and seemingly most important target markets. This is understandable – a lot of noise is being made about

smart metering at the moment. However, it is a sector in which there is already a lot of activity and a lot of competition, and one where certain technologies – notably ZigBee – have a foot well and truly in the door. As the potential number of applications for white space radio is huge, and with the competing smart metering forces already present within the SIG, it does make you wonder whether the Weightless SIG might be better off planting its flag(s) on a less populated field?

The Weightless SIG is targeting to have 500 members within 12 months, and believes that, ultimately, white space has the potential to be bigger than Bluetooth. These are aggressive and ambitious goals. Will they be achieved? Time will tell, but Incisor will continue to track white space and bring you the latest developments.

Meanwhile, watch the Incisor.tv movie here, and see what the good and the great had to say at the Weightless SIG launch event.



PAN OPP
DUN PBAP
SPP HFP
MAP
LOW ENERGY ADVANCED PROFILE TESTING AVRCP 1.4



MecApp PRO - ADVANCED ENGINEERING BLUETOOTH TEST TOOL

MecApp is a versatile Windows executable for Bluetooth profile testing. The application, based on Mecel Bluetooth SDK, is widely used amongst leading product developers as a testing tool. Builds on our proven MecApp profile tester with new features including Low Energy and MAP. MecApp Pro's strong logging capabilities has also been extended to support cfa logs.

READ MORE HERE www.mecel.se

Highest building in Italy gets the EnOcean touch

Within the new administrative headquarters for the Region of Lombardy in Milan an energy-efficient complete solution provides an optimum building management system controlling heat and energy generation, heating, ventilation, sun protection and lighting control. EnOcean room units and wall transmitters are used as a “feeder technology”. With no need for cables, these devices transmit temperature values and manual control commands to the building automation system.

Spread across an area of 30,000 square meters, four buildings surrounding a 39-story tower, the tallest in Italy at over 160 meters. The structure, which was opened in early 2010 by Roberto Formigoni, President of the Region of Lombardy, is used as a multi-purpose building for cultural events and serves administrative and official purposes as well as offering a thousand square meters of green spaces and roof gardens.

The building technology uses Siemens heat and energy generation, air-conditioning, safety, and building management solutions. These include the integrated building automation and control system Desigo with the BACnet communication protocol as well as a lighting system with brightness sensors and presence detectors based on KNX and DALI to ensure constant light level control. 1300 EnOcean enabled wireless wall transmitters are used to switch the lighting system on and off, which also allows manual operation. The management and automation of chilled beams and fan coils make a key contribution to the efficient operation of the building as a whole. To this end, over 2500 solar-operated and wireless room units with EnOcean technology have been installed. 600 EnOcean KNX gateways connect them to the overall network structure within the Palazzo Lombardia buildings.

Wall transmitters make building automation easier

One of the main advantages of the AP 221 and AP 222 EnOcean wall transmitters from Siemens is that they enable wireless operation for almost all functions inside a building. They are easy to install, require no batteries and no maintenance, and are available in two-

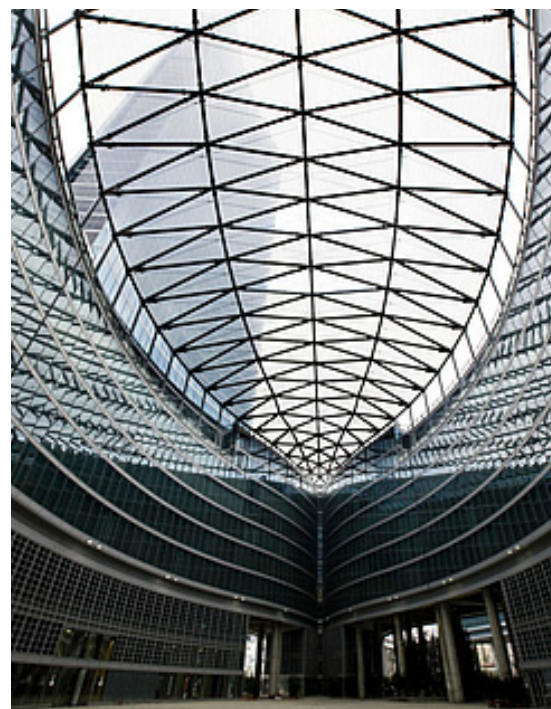
and four-channel versions. Energy is produced by an electro-dynamic generator. Pressing a pushbutton causes a link to actuate an energy converter, which transforms mechanical energy into electrical energy. This sends a radio signal which is picked up by the receiver, the EnOcean gateway, via a 32-bit ID. The signal is transmitted at the frequency of 868.3 MHz. A wide variety of functions inside a building are easy to implement – from lighting and shading right through to heating, air-conditioning, and ventilation. A further benefit is the ability of EnOcean products to communicate with standard KNX and LON building bus systems via an appropriate gateway. If the signals from the wall transmitters are not to be integrated in a building network, an alternative is to transform the signals into switching and dimming lights or shutter/blind control signals using an EnOcean gateway.

And air-conditioning?

With a view to ensuring energy-efficient use of the building complex in Milan, a variety of energy-saving measures were introduced at various points. For instance, the system of chilled beams activates groundwater heat pumps for heating and cooling. A portion of the building's energy needs is met by solar cells fitted to the tower's south-facing facades. The energy generated is distributed as efficiently as possible inside the building by some 2500 batteryless and wireless room units, in this case the new range of Siemens QAX 9x.1 devices. These solar-powered room



Siemens light switch.



Palazzo della Regione.

units detect the inside temperature and transmit the corresponding measured values to the building automation system via the EnOcean gateway.

Energy-efficient double facade for the outside walls

The outside walls of the Palazzo Lombardia in Milan are constructed as a special type of facade, a version of the standard ventilated double facade, developed out of the need to create a horizontal fire barrier in the outer shell, i.e. with no transitions between the floors. Each facade module consists of a layer of double glazing with an intermediate space filled with argon. Another single glazed wall around 95 cm further inside forms a horizontal buffer zone for each floor that is continuously ventilated: a “climate facade”. Air flowing into the room is directed from above onto the inner glass surface and flows into the buffer zone via corresponding openings located near the floor. The buffer zone is under negative pressure due to the air suction lines. The used air thus flows through the climate facade and reaches the suction openings. The buffer zone also contains rotatable vertical slats, which act as a form of dynamic shading and shield interiors



from direct sunlight while still letting natural light through. The position of the slats is controlled automatically by the Desigo building automation and control system. 12 brightness sensors on the

outer walls and an algorithm to calculate the position of the sun around the clock control the rotation of the slats around a vertical axis, protecting the rooms from direct sunlight. Indirect sunlight is

controlled depending on the energy required to heat the building at any given time.

BMW increases commitment to Ubisense' UWB-based Real-Time Location identification system

A new agreement has been forged between BMW, IBS and Ubisense, extending the deployment of a real-time Location Identification System (LIS) across the car manufacturer's global production facilities. The LIS system comprises a communication platform from IBS and identification tags and sensors from Ubisense.

Under the contract, IBS and its software partner Ubisense will expand the roll-out of LIS, which, the companies say, is already delivering significant productivity improvements at two of BMW's eight vehicle assembly plants. The solution will now be implemented at three additional BMW assembly lines in Asia, Europe and the United States.

The LIS integrated real-time location system (RTLS) solution, developed specifically for BMW, combines ultra-wideband (UWB) radio tags and sensors with advanced quality management and traceability software, bringing the production process a step closer to Six Sigma (no, we didn't know what Six Sigma was either – check it out [here on Wikipedia](#)) and the vision of complete traceability. The technology tracks individual vehicles through on-line and off-line final assembly. It determines the identity and location of each car in the assembly facility and, based on the proximity of the vehicles to both fixed and mobile equipment such as tools and scanners, programs and controls the devices.



RTLS tags now replace the barcodes on car bonnets and have been fixed to DC programmable tools. As the cars move through the plant, the tags communicate their location via UWB radio to sensors located along the production line. The sensors instantly relay this data via a local area network (LAN) to LIS, which is integrated with the BMW IT environment. Running under SAP, the BMW IT environment comprises a so-called "communication machine" (KM), the Integrated Production System (IPS) and the Automotive Production System (APS). LIS determines when the tools enter the pre-defined work zones around each moving vehicle, identifying the

vehicle and generating a "positive event." This prompts the APS to automatically load the correct vehicle-specific program to the operative's tool so the next job can be performed.

In 2008, Ubisense and IBS deployed LIS on a 1.8km long assembly line at BMW's Regensburg plant in Germany. In 2010, LIS went live on the new X3 assembly line at BMW Spartanburg in South Carolina, U.S.A. – home to the company's SUV range. The solution will now be deployed at plants in Shenyang, China, on the X5 and X6 production line in Spartanburg, and at the dedicated Mini plant in Oxford, U.K.

low energy wireless news



NXP demos Smart Home Control using 6LoWPAN

Incisor hasn't spent much time looking at 6LoWPAN. The concept originated from the idea that "the Internet Protocol could and should be applied even to the smallest devices," and that low-power devices with limited processing capabilities should be able to participate in the Internet of Things. The 6lowpan group has defined encapsulation and header compression mechanisms that allow IPv6 packets to be sent to and received from over 802.15.4 based networks.

Just because we haven't covered 6LoWPAN doesn't mean that there isn't stuff going on. At a recent IPSO Alliance event on the "Internet of Things", for example, NXP Semiconductors showed a smart home control demo using JenNet-IP – its ultra-low-power wireless connectivity network layer software based on 6LoWPAN. The demonstrator showed compact fluorescent lamps (CFLs), LED light bulbs, smart plugs and a display panel – each with its own IP address – monitored and controlled wirelessly by iPad and Android tablets as part of a secure network. The new JenNet-IP home control demo also showed how groups of lights and other devices can be managed through a mobile app, and how energy usage in the home can be monitored in real time. A Wi-Fi gateway with a USB dongle based on the NXP JN5148 wireless microcontroller served as a bridge between the 6LoWPAN IPv6-based home wireless network and the local IPv4-based wireless network, and also

provided a DHCP server for the IP addresses of local 6LoWPAN devices. A video of the JenNet-IP smart home control demo is available [here](#). It's not up to Incisor.TV standards, but it will help you get the picture!

Jim Lindop, previously CEO at Jennic, but now chief strategist, Low Power RF product line at NXP Semiconductors told Incisor, "Smart lighting as a concept has sparked the imagination of industry observers worldwide, and the feedback we've received on JenNet-IP – from customers and partners – has been brilliant. Our demo at this year's IPSO Alliance event shows how remote controls and tablets can be used to monitor and control not only your lights, but also other devices such as TVs and smart plugs, and manage overall energy consumption in the smarter home."

Lindop also explained that recent updates to the JenNet-IP protocol include enhanced gatewayless operation, allowing consumers to use remote controls and switches to control devices in the home without an Internet connection. This is particularly important, as consumers will typically start off with a small number of IP-enabled lights and a single remote, adding more lights, devices and remote controls as they become familiar with the technology, before finally upgrading the system to include an Internet gateway. Enabling the network to work independently from an Internet gateway ensures that the network will continue to work if the gateway fails, thus, says NXP, overcoming a weakness of other wireless control solutions.

Incisor has made a diary note to itself to look more closely at 6LoWPAN.

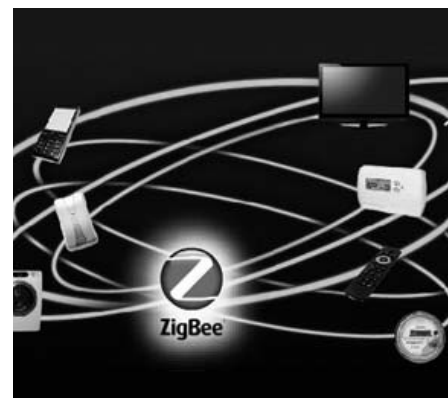
New CEO for EnOcean

EnOcean GmbH today announced that it has appointed Laurent Gaii-Miniet as its new Chief Executive Officer. Together with Andreas Schneider, Chief Marketing Officer, and Uwe Thumm, Chief Financial Officer, he will promote the company's technology and drive business growth on a global scale. He will replace Markus Brehler, who has left the company.

Gaii-Miniet spent 20 years with Texas Instruments (TI), where he held several management positions. Most recently he was General Manager for Low Power RF Products (LPRF), based in Oslo, Norway. He was responsible for the entire Product Line, Managing Marketing, Business Development and Support. A French national, he began his career with TI in 1991 as a Field Sales Engineer in France and has since then held various positions including Regional Sales Director for France and Middle East & Africa and later European Business Development Director for High-Volume Analog & Logic Products in Freising, Germany.

"EnOcean continues to expand its international scope with rapidly increasing demand and the expansion of its customer base in China, Europe and North America", commented Samuel Simonsson, Chairman of the Supervisory Board of EnOcean. "In Laurent Gaii-Miniet we are appointing a dynamic and charismatic CEO with many years of experience of the wireless industry and proven international leadership skills. We are confident Laurent will successfully drive further expansion of the company."

low energy wireless news



Nordic claims 10x lower cost global fleet tracking solution than GPS

Nordic Semiconductor tells Incisor that one of its customers, AgoraBee, has developed what it claims is the world's lowest cost global fleet tracking solution by using Nordic nRF24L01+ 2.4GHz transceivers.

The ChisFleet solution employs Nordic nRF24L01+-based RF ID tags mounted on, for example, a cargo trailer, pallets, or boxes, that continuously communicate 'I'm here' status info (typically once every 10 seconds) with a truck-side mounted control receiver to monitor the presence of all tags. The control receiver is powered by the truck battery and has a built-in GSM/GPRS module that automatically tags GPS position to inventory data that is then sent via GPRS to a remote application server on the Internet.

An AgoraBee-developed propriety radio protocol ensures security, and allied with the use of a unique ID code for each tag and advanced networking utilizing the nRF24L01+'s ability to rapidly wake from – and drop back into – an ultra low power sleep mode (as low as 900nA) within milliseconds, several hundred tags can be used in close proximity and run from a coin cell ('watch battery') power source for up to five years due to the low duty cycle of the application.

"Although theft is a big problem, the biggest problem many haulage and indeed vehicle rental, maintenance, and security firms [which the AgoraBee solution is also ideally suited to] face is locating lost assets whose location was not recorded or recorded manually but incorrectly," AgoraBee R&D Director, Dr. Louis Harik, told Incisor.

"A common example in haulage is not knowing where trailers are left once they have been detached from a delivery truck which can be extremely costly – not to mention stressful – to find. Until now the only way to avoid such problems was to employ GPS modem trackers which are bulky, heavy, difficult and expensive to replace if damaged, and can only run off a battery for several hours at a time so also need frequent – read: 'expensive' – manual maintenance and monitoring as well. Passive RFID chips although less costly – are also not ideal as they require manually-operated (so again prone to human-error and expensive) readers. Our solution is fully-automated, employs matchbox-sized (5.1 x 4.7 x 1.0cm) RF tags that weigh 25g, is 10x less expensive, and can run for five years from a regular CR2032 coin cell."

Nordic Semiconductor's Director of Sales & Marketing Geir Langeland added, "Asset tracking and RFID-type applications would not conventionally be considered an obvious domain for Nordic 2.4GHz ultra low power solutions. Yet as AgoraBee's Chisfleet solution demonstrates, the cost, performance, and extended coin-cell battery-life of 2.4GHz wireless technology is enabling it to challenge and significantly improve upon conventional approaches in a wide range of industrial [as well as home] automation applications."

ZigBee Alliance and Energy@home collaborate

The ZigBee Alliance and Energy@home, which is an Italian collaborative project among Electrolux, Enel, Indesit Company and Telecom Italia, will cooperate on the creation of an integrated residential energy value added services platform for

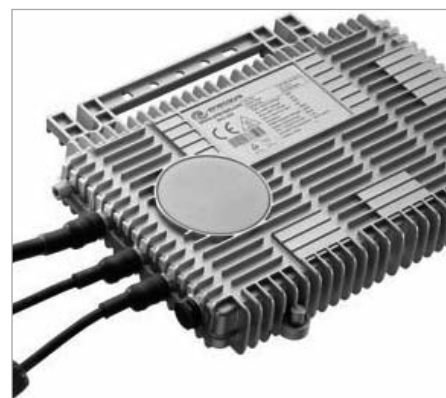
Europe, based on four ZigBee standards. Under a liaison agreement, the groups will focus on ZigBee Home Automation, ZigBee Smart Energy, ZigBee Telecom Services and ZigBee Gateway to create the platform.

The platform will offer control of consumer smart appliances, communication with broadband networks, and communication with Automatic Meter Management system. The group will create value added services designed to help European consumers better manage energy use in their homes.

"Energy@home is focused on increasing consumers' awareness of their energy consumption, while also providing them with new tools to better control their energy use wherever they might be and at any time at all times," Fabio Bellifemine, a member of the Steering Committee of Energy@home told Incisor. "The ZigBee Alliance has done groundbreaking work by developing a variety of standards that will play an integral role in our proposed platform."

And what are those four ZigBee standards all about? Well, ZigBee Smart Energy is the standard for home area networks used by Smart Grid programs to boost energy management and efficiency in homes around the world. ZigBee Telecom Services provides telecommunication network operators with a variety of value added services through the use of mobile devices. ZigBee Home Automation creates smart homes with more control conveniences that improve comfort, convenience and efficiency, and, finally, ZigBee Gateway offers a global device standard for connecting ZigBee networks to the Internet with service providers, including telecom operators. So, now you know.

low energy wireless news



NFC Forum publishes 16th spec

The NFC Forum has released its 16th specification, the Simple NDEF Exchange Protocol (SNEP). SNEP is an application-level protocol suitable for sending or receiving messages between two NFC-enabled devices. The SNEP spec was published following an approval ballot of NFC Forum voting members.

The NFC Forum claims that the extension of the NFC Data Exchange Format (NDEF) to peer-to-peer use in SNEP is a significant advance. Previously, NDEF was applicable only to NFC tags in reader/writer mode. Now, SNEP enables the use of the openly standardized NDEF in peer-to-peer mode, making the seamless interchange of data a reality. Application developers no longer need to concern themselves with how their NDEF data gets transferred between NFC-enabled devices. This capability is similar to the way that NFC Forum Tag Type specifications encapsulate the differences between communication layers. By providing this capability, the SNEP specification makes the difference between reader-writer and peer-to-peer operation modes disappear.

SNEP is a request/response protocol. A SNEP client application sends a request to a SNEP server application to either retrieve data from the server with a GET method or push data to the server using the PUT method. The protocol handles segmentation and reassembly of large messages as well as early cancellation of transfers that would exhaust receiving capabilities.

Beyond the protocol definition, the SNEP specification defines a default server that is available as a well-known service on an NFC-enabled device. This default server functions as a simple Inbox that applies locally defined processing to received NDEF messages.

One example of a potential application for NFC technology developed with the new SNEP specification would be the simplified transfer of contact information – one person's phone can be configured to automatically send business card information when an NFC peer-to-peer connection is established. The recipient doesn't have to do anything other than to accept the business card and allow it to be entered into his phone book.

Then there is the idea of collecting movie posters for later use – a consumer can retrieve and store movie posters with NFC tags onto an NFC-enabled phone while just passing by. Back home, the consumer can display the movie information on a flat-screen TV and navigate to the films' web pages, simply by tapping the phone to an NFC-enabled TV remote control.

Koichi Tagawa, chairman of the NFC Forum told Incisor, "By extending NDEF to peer-to-peer communications, our SNEP specification adds to the usability of NFC technology and broadens its possibilities, enabling enterprises to offer new, creative, and appealing applications to businesses and consumers."

The new SNEP specification is available to the public for download at no charge.

Enecsys selects Ember's ZigBee to optimize solar PV system

Enecsys has teamed with Ember to bring wireless ZigBee communications to rooftop solar photovoltaic (PV) systems so that households and businesses can better monitor and optimize their systems' performance.

Enecsys has integrated Ember's ZigBee system-on-chip (SoC) and ZigBee PRO software into its SMI series of micro

inverters, which convert the DC output of solar panels into AC for connection to the electricity grid. Unlike traditional centralized string inverters, Enecsys' micro inverters connect to each module of a solar PV system, or each pair of modules in the case of the "Duo" product.

Each Enecsys micro inverter has Ember's ZigBee technology built in to communicate detailed information on the performance of each solar module, which string inverters cannot do. The Ember-enabled micro inverters provide real-time and historical data to a user-friendly graphical interface so that users can ensure PV system performance is optimized over the life of its installation.

The ZigBee-based monitoring system can be used to detect performance issues and pinpoint the exact location and nature of the problem, such as shading or dust on a section of a module. The micro inverter also connects to an Ember-enabled ZigBee-to-IP gateway that enables monitoring from any Internet device. And an Enecsys iPhone app enables remote monitoring from anywhere in the world using the mobile device.

Bert Lutje Berenbroek, Ember's vice president of sales for EMEA told Incisor, "While ZigBee is already the wireless standard of choice for devices in Smart Home and Smart Energy applications, Enecsys is leading the charge in extending ZigBee communications on to the roof for grid-connected solar PV systems. The long life, reliability and robustness of its micro inverter family demands the same level of performance for its wireless communications capabilities."

high speed wireless news

Ixia solution for Wi-Fi cellular offload testing

Ixia, which develops converged network testing solutions, has announced the availability of a testing methodology for evaluating Wi-Fi cellular offload. Ixia's IxVeriWave validates true Wi-Fi service capacity and quality, as opposed to current solutions, which Ixia suggests are limited to simply checking network availability. By expanding beyond traditional site surveys, operators can gauge and fine-tune Wi-Fi networks to deliver a much higher quality of experience (QoE) for end users.

Historically, Wi-Fi operators have optimized for network "coverage," rather than capacity and service quality. In modern offload networks, however, service providers are using Wi-Fi networks as an extension of their 3G/4G networks.

Ixia told Incisor that IxVeriWave is designed to test wireless LAN networks using a client-centric model, and claims that this approach delivers repeatable, large-scale, real-world test scenarios that are virtually impossible to create by any other means.

First WiGig Plugfest

The Wireless Gigabit Alliance (WiGig) has staged the first PlugFest to test the interoperability of WiGig devices from several of the Alliance's membership. An Alliance spokesperson told Incisor that this signals that the transition of 60 GHz WiGig networking from a technology specification into commercial products is imminent. Hmmm... we'll see.

The PlugFest was organized in collaboration with MET Labs and assisted by UL CCS, two independent compliance, testing and certification

houses. Test instrumentation for the PlugFest was provided by Agilent Technologies. All three companies are members of the WiGig Alliance.

This PlugFest follows the publication in April of the WiGig's certification-ready multi-Gigabit wireless specification. The latest version 1.1 specification apparently addresses enhancements identified by member companies during the product development process.

Incisor was told that the first release of certified WiGig products is scheduled for late 2012 or early 2013. Plenty of latitude in that timescale then!

4g/LTE/WiMAX news

80 Million LTE connections worldwide by 2013

According to ABI Research, by the end of 2013, LTE connections will be close to 80 million. This figure will account for connections on both FD-LTE, including that paired with WCDMA/HSPA and CDMA 1x/EV-DO, and TD-LTE technologies globally. "We are expecting to see more LTE networks lighting up in the next year or two, but operators are now taking a quieter approach when it comes to deployment," Fei Feng Seet, research analyst, wireless told Incisor.

This is evident in the case of Saudi Arabia, where all three of the nation's operators, Mobily (Etihad Etisalat), Saudi Telecom Company (STC), and Zain Saudi Arabia announced their LTE network launches within a matter of days of one another. All three fought hard to gain recognition and have first mover advantage in the Middle East. The

interesting part is that all three are rolling-out TD-LTE networks using 2.5 GHz licensed spectrum meant for WiMAX and plan to extend their coverage nationwide.

Complications limit 4G Smartphones to 25% of the volume in five years

ABI Research is also forecasting that shipments of 4G smartphones will grow from 4.6 million in 2010 to 245 million in 2016. LTE smartphone shipments will surpass WiMAX smartphones in 2011 and grow at a 72% CAGR over the forecast period. Senior mobile devices analyst, Michael Morgan told Incisor, "Nearly all of the world's mobile operators, including the largest, are supporting LTE. It is an important driver for the LTE ecosystem that dwarfs any other drivers of 4G in general or of WiMAX and LTE, specifically."

4G smartphones are emerging as the next major platform opportunity for mobile operators, device OEMs, IC vendors, network equipment vendors, and content companies. Despite the growing number of 4G-capable device segments, smartphones will remain the largest and most important device segment for incumbents and new entrants. Shipment volumes of 4G smartphones are forecast to surpass all other device segments.

events



2011

2012

DATE	EVENT	LOCATION	NOTES	LINK
Nov 8 - 9 2011	Connections Europe	Movenpick Hotel, Amsterdam, The Netherlands	-	http://www.parksassociates.com/events/connections-europe
Nov 9 - 10 2011	Wireless Congress 2011: Systems and applications	Munich, Germany	Partners include Bluetooth SIG, EnOcean Alliance, ZigBee Alliance	http://www.wireless-congress.com/
Jan 9 - 12 2012	Consumer Electronics Show (CES)	Las Vegas, Nevada, USA	-	http://www.cesweb.org
Feb 21 - 23 2012	Mobile World Asia 2012	Shanghai, China	-	http://www.szwgroup.com/2012/mobile/
Feb 21 - March 1 2012	Mobile World Congress 2012	Barcelona, Spain	-	http://www.mobileworldcongress.com
April 15 - 20 2012	light+building	Messe Frankfurt, Frankfurt, Germany	World's biggest trade fair for lighting & intelligent buildings	http://light-building.messefrankfurt.com
April 24 - 26 2012	Bluetooth Special Interest Group All Hands Meeting	Renaissance Vancouver Hotel, Vancouver, Canada	-	http://www.bluetooth.org
June 27 - 28 2012	European ZigBee Developers Conference	Munich, Germany	-	http://www.zigbee-devcon-europe.de/

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