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you can't help some people

Those of you who have seen our 2011 editorial schedule, and anyone that received last month's Incisor and read the 'what's in next month' section will know that this month we were due to include a special focus on NFC. Well, the NFC Forum's PR people decided that the topics we asked them to talk about didn't suit them, and so they weren't going to contribute.

Bear in mind that Incisor was proactively trying to offer a free, positive PR opportunity for a technology that independent analysts say needs a helping hand (see ABI Research's comments in 'Standards bodies push Wi-Fi Direct and BLE protocols, not NFC' in last month's issue). There were no tricky questions, just opportunities to bring Incisor's wireless industry readers up to date in developments in NFC.

So, our apologies for this feature not appearing. There are some positive stories relating to NFC in this issue, but from companies operating in the industry. We're happy to talk any company that's enthusiastic about its technology, just contact me and we'll get involved.

Meanwhile, there is positive activity in another important area of wireless connectivity, that being healthcare and wellness. Test house TRaC has been working closely with the Continua Health Alliance, and Jon Harros has recently been appointed a Continua Certification Expert. This new qualification is akin to a Bluetooth Qualification Expert (BQE) at the Bluetooth SIG. Jon talks us through the formalisation of technologies in healthcare.

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

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"The Bluetooth program got started about fifteen years ago. It is now possible to look back and see that Incisor/Vince was one of the key things that made it happen. Incisor magazine and Vince's presence were felt soon after the public launch. This was not planned - we weren't sure what to make of it? The magazine was good, it was accurate, was not afraid to ask the hard questions, and also promoted what we believed to be the value of the technology. We had planned an industry targeted journal. Incisor was better, it came from the community. I believe that the community got to trust the good journalism and appreciate the bias towards the end user and developer community. For the Bluetooth program, it provided a vehicle to communicate without corporate spin and it kept us honest in our actions."

Simon Ellis
Former Chair of Bluetooth SIG marketing / Bluetooth SIG Hall of Fame
Principal Engineer, Intel Corporation

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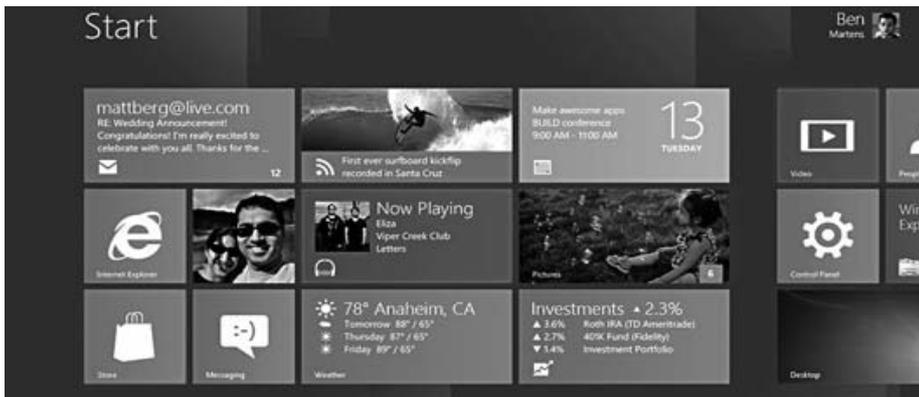
Windows 8 to offer native Bluetooth low energy, Wi-Fi Direct & NFC support

Microsoft has recently announced that its next operating system, Windows 8, will offer support for a range of new wireless connectivity standards, including Bluetooth low energy, Wi-Fi Direct, and NFC, and IMS Research has been looking at the implications. If PCs or portable computing devices (such as notebooks or tablet PCs) include both Windows 8 and the associated radios, poses IMS, this paves the way for them to connect to a wide range of devices such as wireless PC peripherals, health or fitness monitoring devices, and other consumer electronics products - without the need for an additional dongle.

But will PC and portable computing device manufacturers see the value in integrating low-power wireless radios? The signs of this are good with Acer recently announcing that it's Acer Aspire S3 is set to contain Bluetooth low energy (v4.0) capability.

Windows 8 is targeted at both static and portable computing devices (more specifically, at tablets and netbooks) with the announcement that there will be an ARM processor compliant version of Microsoft's latest operating system. Within most notebooks, tablets and netbooks, 'dual-mode' Bluetooth low energy is set to be incorporated as standard as a direct replacement for classic Bluetooth, which is already included in many of these devices. According to a recent report from IMS– The World Market for Low-Power Wireless-enabled Consumer Electronics – 2011 Edition, in 2015, annual shipments of dual-mode Bluetooth low energy ICs for portable computing devices

(notebooks, netbooks & tablet PCs) will top 200 million units.

Phillip Maddocks, a market analyst with IMS Research's Connectivity group told Incisor: "The fact that Bluetooth low energy is being natively supported in the next generation of Windows operating system is a massive boost for the creation of an ecosystem of connectable devices. According to another recent report from IMS Research (The World Market for Low-Power Wireless Modules – 2011 Edition), by the end of 2015, shipments of single-mode Bluetooth low energy ICs are projected to exceed 300 million units, across a wide range of application areas".

For some applications, however, Bluetooth low energy will face stiff competition from Wi-Fi Direct, as low-power Wi-Fi solutions become increasingly available. Although the power consumption of Bluetooth low energy is significantly less than Wi-Fi Direct, certain Wi-Fi solutions are still able to achieve an "acceptable" battery life within certain applications such as PC peripherals. Wi-Fi Direct enabled PC peripherals are already able to communicate to Windows' current operating system, Windows 7, through the use of a software-base Access Point (SoftAP) which allows the connection of peripherals without the need for an access point. IMS Research projects that, by 2015, over 70million low-power Wi-Fi ICs will have been shipped for use in PC peripherals.

With the news that Microsoft's Windows 8 operating system is now supporting a number of low-power wireless connectivity standards, IMS suggests that this will stimulate the creation of new device ecosystems – ranging across a wide range of different application areas – and often employing a variety of competing low-power wireless solutions.

MindTree stack achieves Continua Health Alliance certification

MindTree has attained Continua Health Alliance's certification for its EtherMind IEEE-11073 Stack (Certification IDs 38 and 39) for connected health applications. The Continua-certified EtherMind IEEE-11073 stack is now available for licensing, and is aimed at medical tablet and sensor device OEMs that are building standards-based and interoperable health systems over Personal Area Networks (PAN) or Local Area Networks (LAN).

MindTree's stack is implemented in ANSI-C and is portable, providing an operating system and transport abstraction layers across the Bluetooth Health Device Profile and USB Personal Health Device Class. The solution comprises the IEEE-11073-20601 layer and a suite of IEEE-11073 104xx manager and agent roles for device specialisations as per Continua v1.5 specifications.

Vinod Deshmukh from MindTree told Incisor: "Today there are many health and fitness devices which use proprietary mechanisms to exchange information, both wired and wirelessly. However, with Continua's defined interoperable system, one vendor's device will be able to seamlessly communicate with another vendor's host."

news

Anoto Group restructures, gains new CEO

Remember Anoto? The digital pen and paper company based in Lund, Sweden? Incisor has tracked the company since it was founded in 1999. You can view a movie that we made about Anoto using this link. Our interest in the company was sparked because the company used Bluetooth in an innovative way, although, for a period of time, Anoto became coy about disclosing the technology inside its pen.

Anyway, for a long time we thought that Anoto's solution was going to be massively successful. However, for reasons we can't really understand, that has never really happened. Instead, the company seems to have just struggled its way through endless management changes and restructurings, partnering with lots of companies, but never taking over the world of digital input.

And it continues. Incisor now learns that Anoto Group AB has decided to appoint Stein Revelsby as new CEO, succeeding Torgny Hellström who has completed (another) re-structuring of the company. Stein Revelsby has been CEO of Norden Technology and has been a member of the Anoto board since 2005. He assumed his role as CEO on October 1, 2011.

Torgny Hellström had been general counsel of Anoto since 2004 and took on the role as CEO in July 2010 to lead a re-structuring, cost reduction and strategic review of the company, which now has been completed.

Anoto's press release tells us that Revelsby has been instrumental in defining the new strategic direction that includes the recently announced acquisition of Destiny Wireless, one of Anoto's most successful partners within business solutions, and the joint venture with Korean company Pen Generations Inc. for product and business development in Asia.

Is this the point in time when the Anoto star shines brighter? Who knows, but, sadly, we're not staking our beer money on it.

Bluetooth Innovation World Cup submissions close

The nomination period for the Bluetooth Innovation World Cup (IWC) officially closed on Sept. 15 with, the Bluetooth SIG tells us, a record 337participants. In this year's edition of the IWC, innovators from all over the world were called to submit ideas and prototypes using Bluetooth technology v4.0 in the areas of health care, sports and fitness, automotive and entertainment.

Over the next two months an international team of experts including employees of the Bluetooth Special Interest Group (SIG), contest sponsors, and partners will review the ideas/prototypes and judge them on innovation, implementation and marketability. The resulting nine finalists will be presented to the public at MEDICA in Dusseldorf in November 2011 and online at www.innovation worldcup.com for evaluation and ranking.

Mike Foley, executive director of the Bluetooth SIG, told Incisor: "With numerous Bluetooth v4.0 profiles already available and rapid adoption of the Bluetooth v4.0 profile into numerous hub devices, we are likely to see many of the IWC entries become market ready products soon."

Throughout the competition, event sponsor Texas Instruments (TI) provided development kits at no cost or a discounted rate to more than 100 participants. Freescale Semiconductor gave out more than 100 Sensor Toolbox kits to encourage participants to combine sensor technologies with Bluetooth technology v4.0 low energy applications. Many of the products and prototypes submitted to this year's competition build upon the combination of sensors and the Bluetooth v4.0 specification.

The Innovator of the Year award will be announced and presented at ispo in Munich, also in January 2012. The Innovator of the Year will receive prize money of USD 5,000 and a Bluetooth Qualification Program voucher worth up to USD 10,000, as well as an Ellisys Bluetooth protocol analyzer. Winners of the individual categories will be invited to Nordic Semiconductor's headquarters in Trondheim, Norway for a special Bluetooth technology training.

Continua Health Alliance releases 2011 design guidelines

Continua Health Alliance, the organization of healthcare and technology companies, has announced the release of its 2011 Design Guidelines. Continua told Incisor that the new guidelines will enhance the pathway for complete solutions based on Continua-certified products and services.

The updated design guidelines outline industry standards and new specifications selected by the Alliance for devices, services and communication standards to ensure interoperability, elaborate on Continua-specific implementations and clarify options in underlying standards or specifications. The limited release is currently available to members, and incorporates the following new features:

- Bluetooth Low Energy temperatures sensor device profile.
- ZigBee networking functionality extended to enable a single Sensor-Local Area Network (Sensor-LAN) device to communicate with multiple Application Hosting Devices at the same time.
- Improved user identification guidance on the Wide Area Network (WAN) interface.
- Improved consent management and non-repudiation on the Health Record Network (HRN) interface.

Continua members can download the 2011 Design Guidelines from the Alliance web site.

news

Nokia Car Mode fuses cars with smartphone services

At the recent IAA (Internationale Automobil Ausstellung) event, Nokia announced Nokia Car Mode, a standalone application optimized for the in-car use of Nokia smartphones. Nokia Car Mode features an optimized user interface simplifying the access and use of Nokia Drive (voice-guided car navigation with Nokia Maps), traffic updates, music and voice calls while driving. Nokia Car Mode, built with Qt, will be available for download from Nokia's Ovi Store in Q4 2011 for Nokia smartphones based on Symbian Belle - such as the recently launched Nokia 600, Nokia 700 and Nokia 701 - as well as the Nokia N9.

Nokia told Incisor that Car Mode is the first commercially available solution supporting MirrorLink, formerly known as Terminal Mode. MirrorLink is a standard smartphone-to-car connectivity platform driven by over 20 global brands from across different industries within the Car Connectivity Consortium (CCC). With MirrorLink, smartphones can be connected to in-car displays, car controls systems, and car audio systems. This allows consumers to control their smartphones via the car dashboard, as if the device and its apps were integrated into the car itself.

Nokia suggests that MirrorLink is increasingly gaining industry momentum. Among the first commercially available products presented at IAA besides Nokia Car Mode was Alpine's new ICS-X8, a dashboard-mounted unit that lets drivers of supported cars retrofit MirrorLink capabilities and Bluetooth hands-free phone. After connecting their Nokia smartphone with the Alpine ICS-X8, consumers are able to use smartphone applications from the ICS-X8's 7-inch high-res display.

Floris van de Klashorst, Director Automotive Services of Nokia's Location & Commerce

business told Incisor: "Via MirrorLink users have comfortable and safe access to maps, music and telephony on their phones when they're in their cars even while driving. In the future, MirrorLink will enable plenty of other popular features since we're only at the beginning of what we can do by linking smart devices with vehicles. We expect developers to come up with innovative new applications optimised for use in cars."

The Alpine ICS-X8 will be available in November at Alpine authorized dealers.

DSP Group chipset in DECT and desktop IP/office phones

Wireless chipset solutions provider DSP Group tells us that its XciteR chipset solution is powering the base station of the just launched Gigaset flagship phone SL910 / SL910A, as well as the DX800A high end IP phone developed and manufactured by Gigaset Communications, which claims to be Europe's leading DECT cordless phone manufacturer. The chipset is also being used by Gigaset for its DX600A and DL500A as well as for the DECT IP devices C610 IP/ C610A IP. Designed in collaboration with Gigaset, the XciteR is intended for use in IP and multi-function phones.

The DX800A is an all-in-one, multi-line desktop IP phone with DECT and Bluetooth support. Already launched commercially, the DX800A delivers high-definition (HD) sound quality and full-duplex, hands-free acoustical echo cancellation (AEC).

DSP Group's chipset covers all of the processing needs via an ARM926 application processor running Linux operating system, and a DSP processor.

Martin Streb, COO of Gigaset told Incisor: "As a company unwilling to compromise on quality, Gigaset works with only the
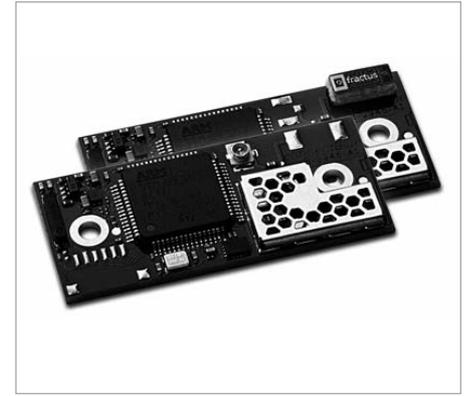
leading DECT and VoIP technology vendors. Utilization of the company's VoIP chipset solution in our feature-rich DX800A is helping to bring our IP phone offering to another level. We are leveraging the power and scalability of the XciteR platform to launch more VoIP and high-end fixed-line telephones at the top end of our portfolio."

connectBlue Offers Bluetooth LE (ready) module

connectBlue is expanding its Bluetooth module range with the Bluetooth Serial Port Module OBS421 which is designed for Bluetooth v4.0, which features Bluetooth low energy technology. The ready-to-embed OBS421 module is a mid-range module tailored for industrial and medical applications.

The new Bluetooth Serial Port Module OBS421 replaces connectBlue's previous Bluetooth Serial Port Module. Compared to the former device, the the company claims that the OBS421 offers greater throughput and higher receiver sensitivity. The module has a small form factor, a low build height, and initially supports Bluetooth 2.1+EDR. And this is where the '(ready)' bit in the headline comes in. Since the hardware supports Bluetooth v4.0, it will be possible to upgrade the OBS421 with Bluetooth low energy through a firmware upgrade that will become available at a later date.

The module provides a mid-range (0-300 meters) wireless transparent serial link using an embedded Bluetooth stack with Bluetooth profiles GAP, SPP, DUN, and PAN. connectBlue lists its key features as high throughput, low latency, high receiver sensitivity, Android support, and high speed UART. The OBS421 also supports Apple iOS connectivity with firmware for use by Apple MFi licensees.

How much tech can you cram into Bluetooth hands-free?

AUTOMOTIVE BLUETOOTH SPECIALIST PARROT HAS LAUNCHED A NEW PORTABLE HANDS-FREE KIT, THE MINIKIT+, WHICH MANAGES TWO MOBILE PHONES SIMULTANEOUSLY AND IS CONTROLLED VOCALLY.

Parrot's "Dual Mode" multipoint technology allows the driver to choose one main telephone out of the two connected and the Minikit+ associates different ring tones to each. It also automatically synchronizes its phonebook with the connected mobile phones, and can store up to 2,000 contacts. Up to 10 mobile phones can be paired to the Parrot Minikit+ (20,000 contacts in total).

Based on Parrot systems that we've tried here at Incisor, it's fair to say that hands-free management of calls is now viable. For incoming calls, the driver just has to say the words "accept" or "reject" to take or reject a call, without touching the mobile phone or the Parrot Minikit+. If the caller is present in the phonebook of the connected mobile phones, the hands-free kit will state the name of the incoming caller. To make a call, the driver just has to press the green button on the Parrot Minikit+ to launch the voice recognition and say the name of a contact in their main phonebook. The Parrot Minikit+ will automatically dial the number.

And there's more..... Parrot also offers a Vocal Service for text messages and email management. The company's TextFriendly service*, which will be available by subscription 'soon' the company says, is accessible from the Parrot Minikit+, and allows users to vocally manage emails and SMS while keeping their hands on the steering wheel. Users just need to register the number of the TextFriendly voice server in their phonebook to access the service directly from the Parrot Minikit+ and then say the required action (listen or write emails or text messages).

The clever features continue: A2DP Bluetooth technology means that users can listen to the music on their Smartphone directly on the Parrot Minikit+, and information and add-ons on Smartphone driving assistance applications, like Satnav instructions, can be broadcast on the loudspeaker integrated in the Parrot Minikit+. When a call is incoming, music or Satnav guidance will stop, starting again at the end of the conversation.

You don't even need to worry about switching it on. The Parrot Minikit+ is equipped with a vibration sensor which will turn the unit on and automatically reconnect it to the mobile phone(s) as soon as the vehicle's door opens.

Parrot says that the Minikit+ will benefit from free regular software updates. To update the software, users simply put the Minikit+ on "update" mode via the vocal menus, connect it to a computer and 'drag & drop' the update to the kit.

For Incisor readers who are keen to know what is going on underneath the bonnet (that's 'hood' for our American cousins), the Minikit+ benefits from new electronic architecture, especially a new generation of Parrot P6i processors (416MHz) that have been optimised for portable applications, are more powerful and consume less energy. The Bluetooth stack, says Parrot, benefits from more than 10 years of know-how and the DSP helps to eliminate surrounding noises, improves the fluidity of conversation and optimizes audio quality whatever the volume of the Parrot Minikit+.

The Parrot Minikit+ will be available from November 2011. In our opinion, with all of the tech that is built into the Minikit+, the MSRP of £64. 99 makes this product something of a bargain.

Proximity

The formalisation of technologies in healthcare

By Jon Harros, Operations Manager, TRaC
Continua Certification Expert (CCE),
Continua Health Alliance

Jon Harros, TRaC

Healthcare and wellness are rapidly gaining prominence in the government departments of the western world. And it's easy to see why that is the case. I recently saw some statistics that brought some clarity to the current predicament that we are in:

- 860 million people have chronic conditions and their care consumes 75-85% of healthcare spending
- 60-85% of the population does not get adequate physical activity; one billion adults are overweight
- 600 million people are age 60 or older
- There is a global shortage of healthcare providers

So it is clear that there is a significant need within this arena to optimise the systems that are associated with both healthcare and wellness.

The technical challenge in achieving the above lies in the complexity of potential products and technologies that do (or will in the future) exist within these systems. In particular the evolution and diversity of the technologies involved (wireless, wireline, local or global) poses a significant problem to both product designers who are unsure which technology to choose in order to break into the healthcare/wellness market, and system developers who have to converge the diverse technologies available to ensure that data can be passed effectively from one location to another.

We have all heard the stories of government agencies around the world spending millions on new technology infrastructure which then doesn't work properly or fails to deliver the benefits that were promised at the beginning. This is clearly an unsatisfactory state of affairs and is largely due to the myriad of different ways that data can be transported and the problems this causes when trying to integrate the associated systems.

As a leading test house in the area of wireless and wireline technologies, TRaC is involved with a number of different Alliances and Forums that are working with new forms of communication and networking. One such organisation that is positioned at the very centre of the healthcare/wellness world is the Continua Health Alliance.

The Continua Health Alliance's mission is to:

Establish an ecosystem of interoperable personal connected health solutions that empower people and organisations to better manage health and wellness.

In essence this is achieved by formalising the technologies involved and ensuring they interoperate at a level which will guarantee a specific level of performance. Clearly some healthcare applications are time critical and the integrity of the data that is transferred is of paramount importance. In addition to this, the security of the transfer needs to be sufficient to ensure that privacy is maintained and no confidential information can be accessed without authorisation.

To this end, the Continua Health Alliance has envisaged a virtual network structure which spans PAN (Personal Area Network), LAN (Local Area Network), WAN (Wide Area Network) and HRN (Health Record Network).
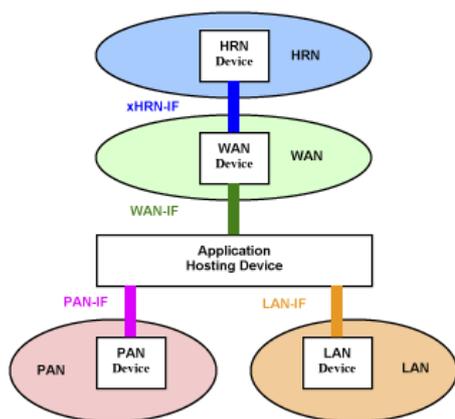
Figure 1 – Continua Reference Network Topology

With this structure, the Continua Health Alliance has established a certification scheme which encompasses all potential devices within any current and future healthcare or wellness system.

Products have been categorised as one of the following five device types:

- **Health Record (HRN) Device –** Intended to operate within a Health Record Network. Typically this will be a records database.

- **WAN Device –** Intended to operate within a Wide Area Network with interfaces to both the HRN and to PAN/LAN via an Application Hosting Device. Typically this will be a network server

- **Application Hosting Device (AHD) –** This device will generally hold some application (usually software) which interfaces with a PAN or LAN device to obtain data about the patient or subject. This device may also be able to access records from the HR device via the WAN device.

- **Personal Area Network (PAN) Device –** This device operates within a PAN and as such is usually some kind of mobile sensor attached to the patient or subject. It provides data to the AHD and in some cases may even incorporate the AHD functionality itself

- **Local Area Network (LAN) Device –** This device operates within a LAN and is intended to provide a means of transferring data (possibly from sensors) over a short distance to the AHD.

These product categories and corresponding interfacing capabilities within the network structure provide a clear means to group product types, allowing for checks to be made on their interoperability by means of (Continua) certification standards.

The Continua Health Alliance has gone further still and formally adopted specific technologies for each of the PAN, LAN and WAN networks. Currently these include Bluetooth wireless technology and USB as transports for PAN, ZigBee Healthcare and Bluetooth Low Energy as transports for LAN.

This has ensured that a guaranteed level of interoperability and security is automatically built into any system made up of certified products. In this way, Continua Health Alliance has provided clarity to both product designers and system developers who now know from which technologies they should choose in order to ensure a robust system.

This formalisation of the technologies for healthcare and wellness is an inevitable step that must be taken in order to prepare for the future networking demands that lie on the horizon.

From a healthcare point of view, this structured approach provides reassurance to patients and healthcare workers alike that the systems will work when they are needed and allow the caring profession to concentrate their efforts and resource to providing the quality service that we all hope for.

Those statistics that I included at the beginning of this article bring into sharp focus the need to make sure these systems are put into place as quickly as possible, whilst ensuring that they work the way they are expected. The Continua Health Alliance's certification program provides a clear way to reach this goal.

With this in mind we can all feel a little more confidence that should we need to make use of healthcare or wellness services ourselves, the systems which help them run efficiently will be in place and will "simply work".

For further information on TRaC's Continua Certification Expert (CCE) services please contact Jon Harros (jon.harros@tracglobal.com)

For further information on the Continua Health Alliance please contact admin@continuaalliance.org

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Industry leaders use *INCISOR.TV* web video

Incisor.TV creates high-quality web TV content for companies in the technology sector. Here are examples of recent Incisor.TV movies. These are now showing on the web sites of the Bluetooth Special Interest Group, and the energy harvesting technologists at the EnOcean Alliance.

Click on the images to view the movies at the Bluetooth SIG and EnOcean web sites.

If you wish to include high-quality Internet TV content on your web site, and whether it is a two minute commercial, a CEO blog or a full company profile, Incisor.TV can deliver.

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Click here to see other examples, and contact Vince Holton for more information.

low energy wireless news

Wireless invades pro athlete technology

The Compex Wireless system is claimed to be the world's first wireless muscle electro-stimulator – as used by HTC-Highroad, the cycling team of 2011 Tour de France sprinter Mark Cavendish – and employs Nordic's nRF24LE1 proprietary 2.4GHz System-on-Chips (SoCs). Professional athletes and serious consumer sports and fitness enthusiasts such as marathon runners and keen cyclists are being targeted.

The Compex Wireless employs mechanical biofeedback ('mi-SCAN') technology to automatically and safely adjust the stimulation settings to the needs of each muscle.

Now, being a bunch of desk athletes who's only competitive activity is seeing who can type their CV fastest, we didn't know this, but electro muscle stimulation is apparently being used by elite professional athletes both during training (to stress key target muscles) and

between training sessions and competitive events (to accelerate recovery cycles and treat common intensive training ailments such as lower back pain).

Nordic told us that the Compex Wireless maximizes application freedom and comfort without the risk of users getting tangled up in trailing cables. It also gives non-professional users the ability to access the benefits of muscle stimulation on a regular basis. In operation, a Nordic nRF24LE1 2.4GHz SoC with an on-board
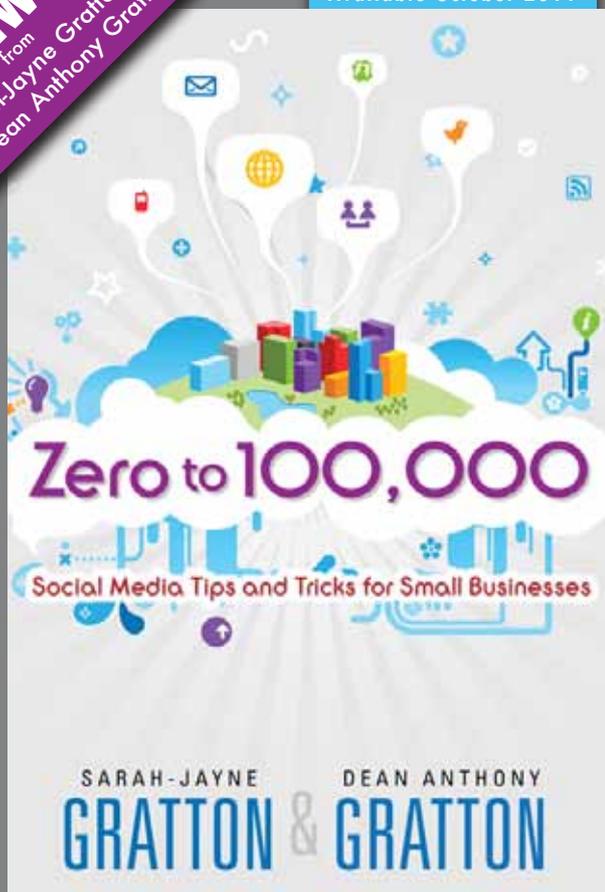
microcontroller running a Compex-developed wireless networking protocol is located in each of up to four wireless circular stimulators (5.5cm diameter, 1.8cm thick, 50g weight). These communicate with another nRF24LE1 located inside a wireless controller featuring a 6.1cm colour LCD screen.

Compex Médical in Switzerland (a division of DJO Global) developed the Compex Wireless, and Nicolas Fontaine, R&D team manager & senior firmware engineer told Incisor: "All stimulators have to be precisely synchronized within milliseconds of each other at all times and the whole wireless network demanded very low latency so that should the system need to stop (e.g. due to a low battery level in one of the stimulators or by instruction from the user), it stopped immediately and simultaneously rather than disorderly over a few seconds."

If you're feeling energetic, the Compex Wireless is available now and retails for €1,250 Euros. Which is probably a little more than our typing competition budget will allow, sadly.

low energy wireless news

Philips DUAL IR/RF remote control uses Nordic RF

Philips' Home Control division is using Nordic Semiconductor's wireless technology in DUAL, which is its QWERTY keypad-equipped infrared (IR)/RF remote control.

Philips told Incisor that DUAL is designed for use by consumer electronics (CE) manufacturers of emerging 'connected' products such as Smart TV, Over The Top (Internet) boxes, and Hybrid set-top boxes (STB). The DUAL platform comprises everything required for CE manufacturers to develop a customized IR/RF remote control with minimum design overhead, and includes a controller handset, USB dongle, and demonstration software that runs on a PC.

DUAL is equipped with a full QWERTY-keypad on one side, and on the other, touchpad or optical sensor controls for alternate input methods, which allows manufacturers to implement free cursor, gesturing, and moving highlight mechanisms. Philips suggests that this makes browsing a better experience than traditional RF remote controls with directional keys.

RF eliminates the need for IR's line-of-sight access, allowing devices to be controlled in the presence of obstacles and even interior walls (up to a range of 15m and assuming wall construction materials do not excessively attenuate the RF signals). Not wanting to burn all of its bridges, Philips has retained IR remote control functionality so that users can operate legacy entertainment devices.

In operation, the DUAL remote handset utilizes a Nordic nRF24LE1 System-on-Chip (SoC) 2.4GHz ULP transceiver running a modified version of Nordic's Gazell RF protocol software. An nRF24LU1+ System-on-Chip (SoC) 2.4GHz ULP transceiver and USB 2.0 compliant device controller, incorporated into a compact USB dongle, plugs into the host device (the product

to be controlled) to form the other node of the wireless link. The Nordic RF technology enables a bi-directional communication link with sufficient bandwidth for rapid screen refresh and seamless navigation.

China to deploy 280M smart meters by 2016, competing technologies vie for position

Modernizing the world's electrical grid has been a long time in coming, with many parts of the grid more than 100 years old. But it hasn't been easy or cheap. Not only does the world's electrical system require updates due to age, but as usage increases, and the building of more power plants becomes more difficult, upgrading the smart grid becomes a requirement, not an option. Deploying the smart grid requires hundreds of millions of smart meters. Worldwide, smart meter deployments continue to grow, driven in large part by very large deployments in China, and In-Stat is forecasting that the deployment of smart meters will reach 280 million by 2016.

Allen Nogee, Research Director told Incisor. "Even without other changes, a smart meter allows a utility to offer a wider range of electric rates and to greatly reduce the cost of meter reading, which alone can eventually pay for the smart meter. With the large numbers of smart meter deployments forecasted, it naturally follows that many technology solutions will evolve."

Recent In-Stat research found that worldwide, powerline is the clear leader in smart meter connectivity, connecting the meter back to the utility. However, there are an increasing number of wireless solutions including cellular, whitespace, and proprietary methods that use unlicensed spectrum and operate in a mesh configuration. In-Stat believes that China, the world's biggest energy consumer, is also the biggest smart meter consumer.

Ember IP stack takes to the road with iPad app

Ember is about to go on the road with the latest development of its IP-based networking stack. Ember's IP Stack is targeted at Smart Grid applications, especially smart meters and Home Area Network (HAN) devices. The company told Incisor that the development of an IP stack to be used in IP-based mains and battery powered HAN devices is an important step in support of the future of the Smart Grid and managing future applications such as micro generation and charging of electric vehicles.

Ember's demo apparently shows a Smart Energy app, running on an iPad, that can get consumption information from an electric meter and which can control multiple thermostats and load shed devices. The meter and HAN devices are based on the IEEE 802.15.4 standard and IP protocols including 6LoWPAN, RPL, CoAP and EXI, while the iPad uses the IEEE 802.11 wireless protocol to communicate with the devices via a wireless router.

Ember says that its goal for its IP Stack is to deliver a protocol that blends the ability to easily monitor and control HAN devices, enabling energy savings and load shifting by providing a technology that is reliable, secure and designed to scale through the long life span and evolving needs of Smart Grid systems.

Bob LeFort, Ember's CEO explained: "Ember is committed to pull its weight along with its customers and partners in standards bodies to develop and standardize low-power IP protocols. Visitors to several upcoming events will get to see Ember's IP stack in action and the benefits this technology will bring in allowing Smart Energy devices to communicate."

Why NFC should keep social media in its wallet!

by Dean Anthony Gratton

ANOTHER MONTH ALREADY... EEESH, WHERE DOES THE TIME GO?

ANYWAY, I THOUGHT I WAS GOING TO LOOK AT BLUETOOTH THIS MONTH, BUT SOMETHING ELSE POPPED UP ON MY RADAR – WELL, TO BE HONEST, I HAD RECEIVED AN EMAIL FROM VINCE SUGGESTING NEAR FIELD COMMUNICATIONS (NFC) MAY BE A TOPIC TO PICK UP ON THIS MONTH, AS THERE HAD BEEN SOME TRENDING TOPICS ON TWITTER SURROUNDING GOOGLE WALLET (GOOGLE.COM/WALLET).

And, whilst sifting through my Twitter timeline, I was also attracted by the supposition that NFC could aid and increase brand awareness through social media. I saw a couple of features on SocialMediaToday.com, so I wanted to offer my insight into NFC technology - where it is, what's expected and to address the notion that NFC could play a role within social media branding and awareness.

What's in your wallet?

I have to start with another popular trending topic. The prospect of Apple's new iPhone 4S or is it iPhone 5? It has been a hot subject and has featured in an abundance of technology headlines and tweets. I haven't seen any confirmed reviews or heads-up as to whether Apple will indeed release their new iPhone with NFC technology, but we'll undoubtedly soon find out, as it's being released this month; again, rumours are that it's penned for the 21st October, although other reports suggest it may appear as early as October 5th. Anyhow, I

suppose, if NFC doesn't appear in the iPhone 4S (or 5), then rumours will undoubtedly re-emerge, yet again, as inevitably the technology will make an appearance in the next generation, surely? I'm confident Apple will follow, as Google Wallet has already appeared in the Nexus S 4G on the Sprint (US) network.

Google's new 'app' provides you with the ability to hold special offers, loyalty and credit cards, all on your dinky smartphone – a 4-digit PIN provides additional security. Google claims it will hold "all those things you have today in your regular wallet" and anticipates extensions to the application, where boarding passes, tickets for theatre shows and so on can all be accommodated. The electronic wallet concept isn't new, but I guess it's been waiting for the right time to emerge; I guess everything needed to be in place. I mean the technology, the infrastructure, the 'smartphone' and so on. Naturally, there are only a few (something like over 100,000 or so) retailers/stores in the US that are capable of supporting Google's new

ecosystem, but I'm absolutely sure that the electronic wallet for Apple, Microsoft, Nokia and so on will soon follow.

Wave your hand, if you want one...

Likewise, MasterCard, which has also worked with Google on its Wallet app, has been in the lab creating an hybrid application, which it has coined QkR. The credit card company was touting a demonstration of the new application in Manhattan recently, although the product is not just NFC-specific. It uses a combination of QR codes and NFC integrated into a smartphone to enable purchases from a shopping channel by just 'waving'.

What's more, there are some echoes of initial reservation over the prospect of MasterCard integrating the technology into Microsoft's Xbox and Kinect products, where purchases can be made with gestures. I think that's fabulous and reminds me very much of the film Minority Report! In fact, I'm sure various gestures could

be defined to suggest a particular type of purchase you wish to make. I'm looking forward to seeing more as this develops.

NFC and social media, really?

I think we've all been waiting for NFC to hit the headlines and start enjoying the wireless limelight that other technologies have recently. It's been a slow start for NFC; it's been waiting in the wings, waiting for its turn to perform. And now, it's definitely time for NFC to strut its stuff and, with big players smooching the technology, then its future seems to be clear, a fact which brings me neatly on to social media.

It's been conjectured that NFC could increase brand awareness through social media. Well, we've seen Google Wallet and MasterCard's vision and how they see the technology playing a part with everyday purchases. The social media bolt-on, if you like, isn't a million miles away either! I mean, just think how NFC could benefit brands, their awareness and message through the power of social media? With this exciting thought in mind, the hypothesis that brands can utilise NFC technology within retail stores, which may further enhance brand messages with brand awareness, along with social media tie-ins with NFC technology, should be taken seriously.

The NFC tag versus the QR Code

There's already an associated cost with printed labels, which uniquely identify a product, so the respective costs associated with reproducing the same product with an NFC tag should be negligible, right? I mean, the rumoured cost is to be less than $0.60 for a tag, so I really don't see this breaking the bank, so to speak. Yes, each tag has to be programmed, but surely, each label has to be printed uniquely – it's a case of a 'six of one, half-a-dozen of the other' situation!

A tag is a mechanism from which information can be wirelessly shared; in the same way that a QR code can be read by a scanner (NFC reader). In some stores there will be a combination of tags and tag readers – the Smartphone will contain a tag/reader combination, as it is capable of sharing information, so that a store can retrieve your name, contact information and so on (with your permission) and likewise you can read information from a tag. At the back end of the NFC application, there may be several other applications supported by a web-portal or, in fact, a link through to a social media platform – 'Likes' a 'retweet'; '+1' and so on. Of course, adoption will be slow at first, though early adopters will fuel the greater purchasing community.

Are you hearing voices?

The brand tie-ins are potentially large. The majority of consumers, who were once brand loyalists, are nowadays in an unprecedented competitive market; consumers have become spoilt for choice in terms of affordability. With social media alone, brands can (and should) develop a dialogue with their consumers, which could well be further compounded by NFC supporting an ecosystem where consumers can begin to resurrect that loyalty spirit. It empowers both the consumer and the brand with some powerful tools – nowadays, it's a two-way process and no longer can brands rely on shouting out their brand message with a megaphone – 'buy this product now'!

NFC has the potential to create a lively and dynamic market community, sharing experiences and purchases with the wider community, all enjoyed through social media. The notion isn't absurd, as we have all first-hand access to customer services through various social media platforms. Anyone disgruntled with a product can challenge the brand directly and hopefully receive the assurance or feedback they are seeking. Left unaddressed, consumers may feel a little hesitant in making purchases from the same company if they are unwilling to engage their consumer-base. True, customers may not always be right, but nowadays their voices can be heard in all forms of social media platforms.

Until next month ...

It's October already and it's my birthday this month (the 26th, if anyone wishes to send me a greeting or present). I have no idea what the wife is planning (if anything) but I'm guessing unnecessarily large quantities of red wine will be involved, along with a fan-dabi-dozi nosh-up!

And, of course, there are not too many shopping days left 'til Christmas! I just wanted to be the first person to say it – that's all…

Anyway, in this month's issue (again) there's a fabulous advert from Pearson offering an amazing discount on our (Sarah and my) new social media book, Zero to 100,000: Social Media Tips and Tricks for Small Businesses. The book is penned for release October 20th, so be sure to pick up your copy.

This is where Dr G signs off this birthday month.

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.

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.

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.

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low energy wireless news

NXP enhances NFC performance

NXP Semiconductors has introduced the NTAG203, which is an NFC Forum-compliant Type 2 tag. Target applications include smart posters, social media, service discovery, and electronic enhancement of printed media, where a tap of the NTAG203-based tag can retrieve data.

The ability to convert static data such as a URL into digital bits stored in an NFC tag will allow the mobile device to retrieve the data and make it not only more useful to the consumer, says NXP, but also to the merchant who can secure better analytics of the data through higher redemption rates. NXP suggests that existing contactless solutions such as NXP MIFARE smart cards have proven the convenience of a tap, paving the way for consumer acceptance of new NFC applications.

Chris Feige, who is general manager, tags and labels product line, Identification business, at NXP Semiconductors told Incisor: "Together with our customers, we analyzed market demand as well as new use cases, to enhance our portfolio of NFC tag ICs. The result is the NTAG203, an NFC tag IC that can enhance the performance of existing tags, or enable the design of smaller tags without compromising performance."

The focus of the NTAG family is to facilitate reuse of existing inlays and tag designs already in production, while minimizing the number of product types customers need to stock. The enhancement leverages existing MIFARE-based tags that have been shipped in high volumes worldwide. A specific focus was apparently to optimize the NTAG RF performance to tune for either longer read range with existing antenna designs, or facilitate smaller tags with read range equivalent to existing solutions. Now tags as small as 12mm in diameter can be used with respectable performance from an NFC-enabled mobile device. The results of initial RF tests show a 20-25% increase in performance compared to equivalent sized tags, which in turn allows the mobile device to read the tag more easily.

The NTAG203 is launched as an NFC Forum Type 2 Tag, with 144 bytes of memory, and is available now.

Turkcell prepares NFC-enabled cellphone

Turkish communications and technology company Turkcell has selected the PN544 near field communication (NFC) radio chip for its recently launched T20 smartphone. The T20 handset, manufactured by Huawei, is one of the world's first commercially available low-cost Android NFC-enabled smartphones. The aim is to allow consumers to perform a variety of secure contactless transactions including payments, data sharing, public transport, event ticketing and access control.

The Turkcell T20 is already pre-loaded with Turkcell Cep-T Cüzdan; a mobile wallet service developed by Turkcell Technology on Gingerbread 2.3.3 OS. Cep-T Cüzdan subscribers can also benefit from the discovery screen in the UI that allows them to know which cards they can include in their mobile wallet.

The T20 handset uses a secure element in the SIM card, which is connected to NXP's NFC chip via the single wire protocol (SWP). The resulting NFC solution enables secure wireless two-way communication between the T20 Smartphone and other phones, terminals or readers. NXP told Incisor that it provides a fully compliant end-to-end NFC platform for handset manufacturers and operators enabling next generation NFC devices and services. Complementing the secure NFC solutions, NXP offers a complete open source software stack for NFC which is fully integrated and validated on the Gingerbread Android platform.

Cenk Bayrakdar, chief new technology business officer, Turkcell, explained his company's thinking: "NFC technology is instrumental in helping us to achieve our ambition of increasing the penetration of mobile contactless innovations in the Turkish market. Working with NXP, we were able to build a feature-rich, interactive and flexible mobile wallet solution through the open source Android platform. This is our first commercial smartphone developed on Gingerbread 2.3.3 OS and we are extremely pleased to be first to market with this innovation in Turkey."

NFC enters the automotive industry

Stollmann, which is making a name for itself as a provider of NFC protocol software, is now supplying Harman, the global audio and infotainment group.

The two companies have set a 'wireless meets auto' agenda, based around the premise that near field communication (NFC) makes it easier to connect cell phones to components in the vehicle.

Together with Harman, Stollmann is offering a solution for PIN-free start-up of Bluetooth connections of devices simply by "touching" NFC hotspots. Whether playing telephone calls over your car speakers or listening to music from your cell phone or MP3 player in the car, the goal is for it all to be just a click away with the vehicle's infotainment interface. In the future, Stollmann told Incisor, NFC will pave the way for solutions in motor vehicles ranging from simple diagnostic interfaces all the way to payment solutions.

Harman is adding NFC to its future portfolio. Stollmann's NFC stack is chip-neutral, based on the NFC Forum standards and enables all operating modes, such as Reader/Writer, Peer-to-Peer, and CardEmulation, for a wide range of applications.

Exhibition contact management enabled by UWB-based real-time location system (RTLS)

Location solutions company Ubisense supplied real-time location system (RTLS) technology recently to help major exhibitors manage customer contacts at INTERZUM – the international tradeshow for the furniture and interior design industries.

Now, RTLS systems aren't new, but Ubisense' solutions are of particular interest to Incisor because the location tags transmit ultra-wideband (UWB) radio signals to a network of fixed sensors, which use the incoming signals to exactly locate the tag's positions. As we say each time UWB is mentioned – you thought the technology was dead, didn't you....... ?

Anyway, back to the story.

As any company that regularly attends trade shows knows, establishing a dialogue between visitors and company representatives is crucial, otherwise massive investments in stand space, the stands themselves, travel and accommodation can be wasted. However, for a large and busy trade booth, logistical problems can get in the way of successful communication with customers. Worst case scenario, potential customers may leave if the correct contact cannot be found quickly.

Exhibitors like Häfele were determined to avoid this problem at the 2011 INTERZUM tradeshow. Using a precise indoor location system from Ubisense, the company ensured that communication between visitors and company representatives was timely and smooth. INTERZUM is an extremely important forum for Häfele. At this year's show, there were some 250 Häfele employees for existing and potential customers to meet. Using Ubisense technology, whenever a visitor approached the booth's information desk, reception staff could instantly locate the whereabouts of the required contact person within the area of the 1100m2 booth. A "runner" would then quickly find and inform the relevant colleague ensuring

contact between customer and company representative was established swiftly.

To utilize the service, Häfele needed just three components: small, battery-powered transmitters known as tags; sensors; and a special software system. Before the tradeshow started, all employees were equipped with tags containing all the relevant carrier information. Once activated, these tags generated location signals which were picked up and analysed by sensors covering the exhibition booth, ensuring that any employee could be located to within 30cm.

Using Ubisense software, location data was recorded, processed and visualised in real time and transmitted to the down-stream person information system – an application developed specifically for this purpose by Frankfurt-based SKILLsoftware GmbH, a specialist in customer relationship management (CRM) and object management software.

The SKILL person tracking system managed staff based on their product knowledge, technical expertise or language skills, as well as their location at the tradeshow. Ubisense components were integrated into the software, so when searching for employees by specific

criteria, their location was instantly indicated on a booth map. To facilitate the search for 'floater' employees, a contact card showing a picture of the relevant employee and their current location could be printed. The software was also used to manage messages for employees and to log their absence from the booth.

Terry Phebey, vice president of marketing & sales at Ubisense, a company that boasts customers such as BMW, Airbus and Caterpillar, said, "Our RTLS solutions have become well established in automotive, aerospace and transportation markets worldwide. We are happy to see that the technology is now also gaining ground in person tracking systems. The deployment at INTERZUM illustrates that being able to locate a person quickly and efficiently can add enormous value."

This application for UWB is nothing like those originally touted for the technology. Those apps were all about video streaming, and other high data rate applications. It's funny that – with a few minor exceptions – those have not happened, and this low data rate application is proving to be a real success.

We're interested to know more, and will be including an interview with a Ubisense spokesperson in the next issue.
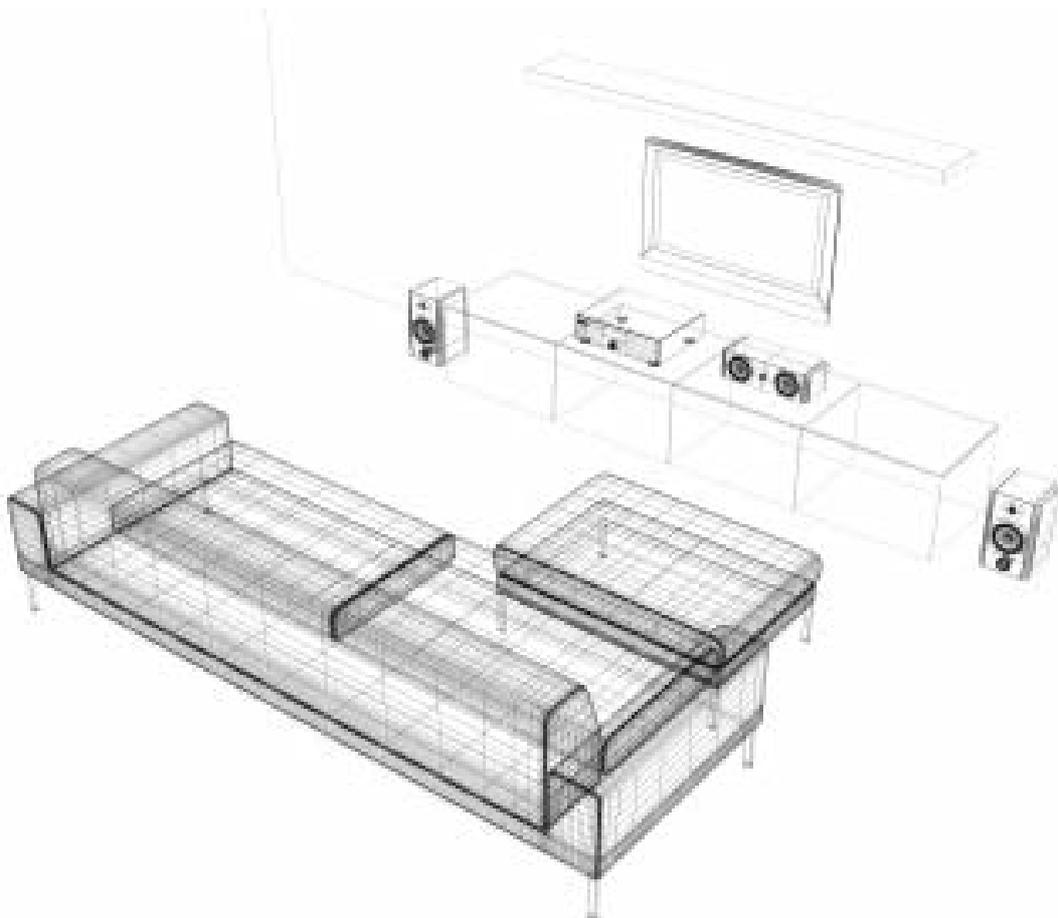
TTP streams HD video over white space link

British R&D company TTP tells Incisor that it is successfully streaming iPlayer HD video at speeds of over 5.4Mbps, across a 5.6km white space link, from its research centre near Cambridge to a house in the rural village of Orwell. Synching with statements made by Neul's Luke D'Arcy in last month's Incisor.TV video interview – view here, TTP says that the early success of these trials demonstrates the potential importance of white space connections to deliver fast and cost-effective rural broadband to some 600,000 poorly served homes and business, as well as for new applications such as remote smart metering.

White space broadband has a practical range of up to 10km, versus just 4km for typical wired ADSL connections, and the cost of deployment will be significantly less than fibre over long distances. While white space works much the same way as Wi-Fi, TV spectrum signals travel farther, are better at penetrating walls and require fewer access points.

"The TTP white space link is very much still work in progress but we expect to rapidly reach speeds of greater than 12Mbps over 6km using a single TV channel, compared to wired ADSL broadband that struggles to achieve 2Mbps with less than half the range," says Richard Walker, Head of Wireless at Cambridge-based TTP . "Consumers will simply have to purchase a second TV aerial to go on the roof or in the attic, along with a white space router similar in size and price to that of an existing home router; while we believe charges will be equivalent to current ADSL costs."

Working with technology partners such as Neul, TTP said that it is also looking to enhance performance by experimenting with high order modulation schemes and signal coding techniques to increase spectral efficiency and to ensure that white space connections can co-exist without interference to existing TV broadcasting. This also requires a sophisticated central database approach with heuristic learning and feedback mechanisms, in a similar way to internet search engines that learn from the information users request and ultimately select.

The drive for rural broadband has the support of the UK Government, which recently allocated £360m to improve access across England and Scotland, while earlier this month OFCOM gave further support for white space by saying that it would allow multiple third-party providers to develop white space databases and would make white space devices licence exempt. OFCOM expects that white space technology could be launched in the UK as early as 2013 and is already considering the future use of other white spaces such as those in the band currently used by FM radio services.

TTP is part of the White Space Consortium - which also includes the BBC, BSkyB, BT, Microsoft, Neul, Nokia, Samsung and others – that has been established to focus on how unused TV spectrum could provide an inexpensive solution to satisfy the escalating demand for wireless connectivity from UK consumers and businesses in towns, cities and rural areas. Along with consortium members, TTP is also exploring the use of white space spectrum for emergency service applications and smart grid machine-to-machine control and monitoring.

"White space developments are moving very fast and it is certainly a very exciting space to be in," says Walker. "Utilising the white space available in TV spectrum is just the start; many of the same technologies can be adopted to harness other licensed spectrum allocations that are significantly under-utilised."

A new special interest group, called Weightless, has been formed for the white space community, and Incisor readers will be able to see a video report from its inaugural event in the next issue.

INCISOR.TV VIDEO REPORT

Neul and Cambridge Consultants are two of the white space trailblazers.

Incisor.TV talks to two of their execs in order to gain in insight into the latest developments in this rapidly emerging sector.

Click on the screens to watch the white space movies.

INCISOR.TV
WHITE SPACE REVIEW
SEPTEMBER 2011

CONTRIBUTOR:
CAMBRIDGE CONSULTANTS

Fraser Edwards explains how white space is more than just a solution for bandwidth crunch, and looks specifically at applications in the telehealth market.

INCISOR.TV
WHITE SPACE REVIEW
SEPTEMBER 2011

CONTRIBUTOR:
NEUL

Neul is the first company to launch real, live white space products. Luke D'Arcy positions Neul in the white space market, and provides an overview of developments including the establishment of a white space standard, and the Weightless Special Interest Group.

high speed wireless news

Murata develops front end Wi-Fi and Bluetooth modules

Murata's latest front end modules for Wi-Fi and Bluetooth applications, the Microwave Monolithic Integrated Devices (MMID), integrate the company's power amplifier, low noise amplifier and switching product into single packages for both the 2.45GHz and 5GHz bands. The modules can be combined with a single chip radio - such as the Broadcom BCM4330 chipset - to provide a connectivity solution for the cellular phone, portable device, and person computer markets.

Murata describes the line as extremely flexible, with the ability to support 802.11b/g and Bluetooth and/or 802.11a. Designers can also use one or both front end modules to mix and match wireless networks with minimal design resources. This, says Murata, reduces the complexity of design and greatly improves time to market. Other benefits include optimized performance at low current consumption to save battery life. Further, the miniaturized size allows for a compact design, providing the small and thin end products that consumers demand.

Keisuke Katabuchi of Murata Europe told Incisor: "Murata is uniquely positioned to do this work because of our vast number of customizable solutions for Wi-Fi and Bluetooth. From complete highly integrated modules and sub modules to discrete components, we have the balanced technology and vast experience to provide the most advanced, complete product portfolio with quick time-to-market. Murata's MMID series is tremendously flexible in terms of shape and size, allowing for placement just about anywhere on the board where there is space. The fact that they are already proven with Broadcom's BCM4330 chipset speaks volumes about market demand."

Ruckus Wi-Fi addresses growing user density concerns

Ruckus Wireless has unveiled the ZoneDirector 5000 (ZD5000) along with a new version of its ZoneFlex software (v9.2).

As the growth of Wi-Fi-enabled mobile devices continues, the demand for wireless capacity and speed is driving organizations to offer more reliable, high-speed wireless service within dense user environments. Ruckus claims that the ZoneDirector 5000 is the industry's first controller-based system that can be flexibly deployed either in-line, or out of the data path, supporting up to 20,000 clients, 1,000 access points (APs), 2048 wireless LANs (WLANs) and 1,000 tunneled connections within a single platform. Additionally, Ruckus has increased the client capacity of its ZoneFlex dual-band 802.11n APs to support 512 concurrent devices (256 clients per radio.

"Given the unstoppable move to mobile Internet devices and applications, dealing with user density and scalability is quickly becoming a point of contention for enterprises and service providers," Selina Lo, president and CEO of Ruckus Wireless told Incisor. "Ruckus is tackling this problem by combining patented adaptive antenna technology that enables more consistent performance and client connectivity with a powerful new hardware platform and software enhancements that take away the complexity historically associated with managing large-scale Wi-Fi infrastructure."

Among the first customers to deploy the new ZD5000 is NEBO School District in Utah, USA. NEBO has deployed redundant ZD5000s to manage more than 625 Ruckus 802.11n access points across 43 different schools and 6 district sites.

802.11n Wi-Fi networking equipment unit shipments increase

In Q2'11, worldwide revenue for the Wi-Fi network equipment market remained relatively flat compared to Q1'11, staying at $1.6 billion, research company In-Stat has told Incisor. Continuing a trend, 802.11n remains the fastest growing Wi-Fi technology with shipments rising 17% from the previous quarter, while revenues grew nearly 7%.

"In terms of total unit shipments, TP-Link is number one, leading the way with a 26% market share," said Brad Shaffer, analyst." Netgear has overtaken D-Link for the number two spot with nearly a 19% market share while D-Link holds a little over a 17% share, placing them close behind in the number three slot. Linksys and Pace round out the top five, holding market shares of 7% and 5%, respectively."

In-stat also told us that shipments of wireless network adapters were up from the previous quarter, rising 7.4% overall to 5.27 million, and that North America had gained regional market share, rising to 33% in the current quarter. Meanwhile, 802.11n-enabled networking equipment now accounts for 68% of all Wi-Fi networking equipment unit shipments and the USB form factor experienced an increase of 8.6%.

Major telecom equipment vendors, operators showing greater interest in femtocell market

By Frédéric PUJOL
Head of Radio Technologies & Spectrum Practice, IDATE

Source: IDATE

Here at IDATE we have recently published the 4th edition of our market report "Femtocells". This report presents the latest trends in the femtocell market, which has recently regained momentum with the entrance of new ODM (Original Design Manufacturer) and chipset vendors as well as the emergence of new markets in the form of enterprise and public access. It examines also how mass-market deployment levels will be reached - 39.4 million deployed units by 2015 - and what obstacles must first be overcome. I'm taking this opportunity to look at some of the findings.

Following a slow start, the number of operators launching commercial femtocell services is increasingly quite rapidly in the Americas, Asia Pacific, and Europe, Middle East and Africa. Our team estimates that the worldwide femtocell access point market will reach a cumulative total of 39.4 million deployed units by 2015, representing a compound annual growth rate (CAGR) of 71% between 2011 and 2015.

Vendor evolution accelerates...

The femtocell vendor environment is going through a process of rapid evolution. While the sector was dominated initially by a handful of small, specialist vendors - including ip.access, Ubiquisys and Airvana - this is no longer the case. Major telecom equipment vendors - including Alcatel-Lucent, Cisco, Hitachi, Huawei, NEC, Nokia-Siemens Networks (NSN), Samsung Electronics and ZTE - are now fully engaged in this market.

In addition, the recent emergence of a new category of mainly Taiwanese ODMs is shaking up the industry once again. This latter category of vendors is acting to drive down prices as it benefits from the rise of open standards, adding to the likelihood
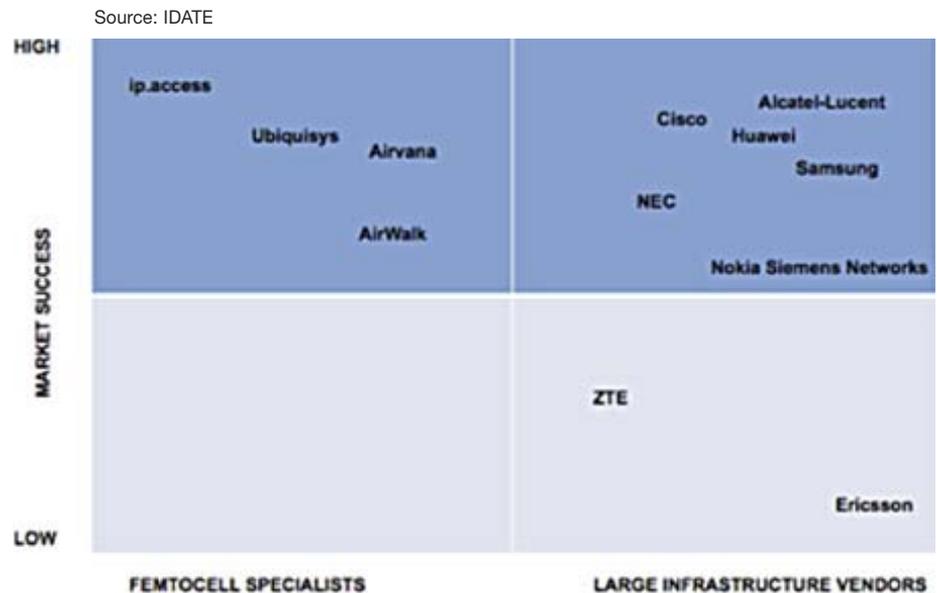
that mass-market volumes will be achieved.

Likewise in the femtocell chipset sector, while Picochip - a pure-play small cells pioneer - has a clear and substantial lead, the number of viable and interested players has increased greatly. Broadcom (via its acquisition of femtocell specialist Percello), Texas Instruments and Qualcomm are all now devoting considerable resources to the sector.

Operator Interest Growing...

In the past year the number of live femtocell networks has doubled, in line with falling prices. There are now 30-plus deployments in more than 20 countries, including eight of the world's largest operators by revenue. Femtocell access point (FAP) prices have now reached EUR 100, though care needs to be taken in terms of what is encompassed by that figure.

From the operator point of view, femtocells offer a cost-effective means of providing additional coverage and capacity while reducing capital and operating costs and improving retention. The concept of femtocell-enabled data offload is steadily gaining ground and it is likely that, once the market develops further, a range of new femtocell-based business models will emerge.

Increasingly, a far greater degree of emphasis is being placed on outdoor (metro and rural), enterprise and LTE femtocells under the 'small cells' heading, thereby widening the addressable market. IDATE believes the femtocell sector will grow in importance during the coming years as the small cells concept develops into an over-arching strategic approach encompassing both coverage and capacity considerations.

www.idate-research.com

Iridium links Wi-Fi to satellites

Worried that your iPhone won't let you check your email while you're on the summit of Everest? Fear not. Iridium Communications, which sets out its stall as the only mobile voice and data satellite communications network that spans the entire globe, has the answer. The network operator has announced its vision for the future of personal mobile satellite communications, Iridium Force, which it claims will make Iridium technology more accessible and cost-effective for partners to develop a wider range of Iridium-based products and services. This includes the licensing of core Iridium technologies.

Of key interest to Incisor is the fact that the operator is planning to extend beyond satellite phones: Iridium is enabling communications with Wi-Fi-enabled devices such as smartphones (BlackBerry, Android or Apple iPhone), tablets and laptops, as well as applications that are normally beyond the reach of terrestrial networks;

Matt Desch, CEO, Iridium told Incisor: "Iridium pioneered the satellite phone industry more than 10 years ago with the first handheld, commercial satellite phone. With Iridium Force, we are leading an industry transformation once again by significantly extending the universe of handheld connectivity options. Iridium Force is our strategic vision for rapidly connecting more people in ways never thought possible - even going beyond the limits of our own devices. Iridium Force is more than the launch of a new satellite

phone; it signifies our commitment to enable powerful new capabilities including those devices that are already in customers' hands to work on the Iridium network - today and in the future."

Via the Iridium AxcessPoint, Wi-Fi-enabled smartphones, tablets and laptops will be able to connect anywhere through the Iridium network. The AxcessPoint is a portable Wi-Fi hotspot accessory that connects BlackBerry and Android devices to the Iridium network using an Iridium Extreme or Iridium 9555 satellite phone. iPhone, iPad and iPod Touch devices, and Windows and Mac laptops, will need to download the (free) Iridium AxcessPoint Mail & Web application. The AxcessPoint is expected to be available in fourth quarter of 2011 with a suggested retail price of less than $200 (USD).

Meanwhile, for Iridium phone users travelling with laptops, Iridium AxcessPoint Connect is a downloadable application for use with the Iridium Direct Internet software connectivity tool, and turns any Windows laptop into a global Wi-Fi hotspot when connected to an Iridium Extreme or Iridium 9555 satellite phone. AxcessPoint Connect enables Wi-Fi compatible devices, such as smartphones, to synchronize and respond to email or use the Internet over the Iridium network. Users can download Iridium AxcessPoint Connect and Direct Internet applications free of charge.

Standard airtime charges apply for use over the Iridium network for the these solutions.

4g/lte/wimax news

Small cell backhaul to shift toward wireless backhaul

While outdoor small cells have received a lot of attention lately, small cell backhaul has yet to see the spotlight. The reason has been twofold – first, there hasn't been any significant outdoor small cell deployment yet, and second, operators are still in the process of trialling and testing small cell backhaul technologies, especially the newer contenders.

Due to its unique characteristics, there are numerous considerations that need to be taken into account for a small cell backhaul solution. These include product footprint, range, cost, Ethernet/IP support, and capacity. By 2016, an estimated 58% of outdoor small cells will be backhauled using wireless techniques.

While fiber, copper, and traditional microwave are currently being used to backhaul rooftop micro base stations, the emergence of wireless technologies like NLOS OFDM (sub 6 GHz), MMW (60-80 GHz) and also Wi-Fi backhaul solutions are likely to find preference due to their flexibility, low cost and ability to use point-to-multipoint (PMP) and point-to-point (PTP) techniques to backhaul clusters or rows of small cells.

Aditya Kaul, practice director, mobile networks at ABI Research told Incisor: "Small cell backhaul space is still in its early days, with a number of small vendors positioning their solutions, especially on the wireless backhaul side. While the majority of small cell backhaul activity is concentrated in OFDM NLOS sub 6 GHz and to some extent in the MMW 60-80 GHz space, the cost of these solutions will need to come down to allow operators to make a favorable small cell business case."

Motorola designs own LTE Chip for Droid Bionic

ABI Research (see previous story) also pulls products to pieces. Incisor readers may have noticed that Motorola started shipping its Droid Bionic less than a couple weeks ago. As part of its Teardown research service, ABI tells Incisor that it has dismantled, analyzed, and tested the device down to the component level. The conclusion? The second fastest application processor tested to date, a custom LTE chip designed by Motorola, the CDMA portion of the phone from Qualcomm, and some new RF components alongside a filter technology from a decade ago.

James Mielke, ABI Research vice president of engineering told Incisor: "Motorola has mixed some of the latest technology with quite a few components now considered the norm and a few that have not been seen in phones for years." One of the newer components, the OMAP4430, scored well in performance testing but not quite high enough to top the leaderboard.

Mielke went on to explain that major changes included an LTE modem designed by Motorola, a new LTE transceiver from Intel (Infineon), an interesting RF configuration supporting more than the advertised CDMA/LTE support and a transition from Nvidia Tegra II to OMAP4430 application processor, and summed up: "Motorola took a smart approach to introducing new technology by integrating their new components with previously tested technology. It is pretty easy to surmise what caused the launch delays".

events

Henri Seydoux
CEO, PARROT

	DATE	EVENT	LOCATION	NOTES	LINK
2011	Oct 4 2011	Bluetooth Technology Conference	Munich, Germany	-	http://www.bluetooth-conference.com
	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/
2012	Jan 9 - 12 2012	Consumer Electronics Show (CES)	Las Vegas, Nevada, USA	-	http://www.cesweb.org
	Feb 21 - March 1 2012	Mobile World Congress 2012	Barcelona, Spain	-	www.mobileworldcongress.com
	April 24 - 26 2012	Bluetooth Special Interest Group All Hands Meeting	Renaissance Vancouver Hotel, Vancouver, Canada	-	www.bluetooth.org

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