

# INCISOR™

for the short  
range connectivity  
environment

Video enabled  Issue 130

January 2009

## FILTERING THE NOISE AROUND UWB

### THIS ISSUE

STACCATO COUNCILS CALM  
REMOVING WIRES IN HEALTH DEVICES  
THE WIRELESS PAN SEASONAL MENU  
HEADING FOR A BLUETOOTH BREAKTHROUGH

[www.incisor.tv](http://www.incisor.tv)

sponsored by



# beer and roaming in Las Vegas

Yes, that's right, we are packing the bags again as we shortly head off for Las Vegas for the tech industry jamboree that is the Consumer Electronics Show.

Can't they move the date of that event? The workload and prep involved means that the Christmas holiday is ruined for us and surely thousands of other poor saps at technology companies the world over. I mean, whose great idea was it in the first place to stage CES during the first week of Jan – it's not even warm in 'Vegas, for Pete's sake!

Anyway, rant over.

Incisor TV will be in the glittering metropolis, pounding the halls to see what is new, good and perhaps even great. We will be filming two movies. One for the Bluetooth Special Interest Group, and focusing on the annual Best of CES competition. The other is for the WiMedia Alliance. As Staccato's Jeff Chang makes clear in this issue, the world shouldn't be taken in by the (largely media driven) wave of negative publicity for Ultra Wideband. There is plenty of positive news, and the movie we are making will not only tell the story, but it will show lots of real UWB products. The proof of the pudding is in the eating, they say. Well, make space for a slice of high speed WPAN pie.

Oh, and I'll award a lifelong free Incisor subscription to the first person to contact me and correctly identify the original version and source of the smart-ass headline above ....

**Vince Holton**

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

## INCISOR TV AT CES

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

**Mike Knivett**  
[mike@incisor.tv](mailto:mike@incisor.tv)

or

**Vince Holton**  
[vholton@incisor.tv](mailto:vholton@incisor.tv)

## CONTENTS

### FILTERING THE NOISE AROUND ULTRA WIDEBAND

The reports of UWB's death have been greatly exaggerated, says Staccato's Jeff Chang

### HEALTH DEVICES: REMOVING THE WIRES TO IMPROVE THE CARE

By Robin Heydon, CSR

### THE WIRELESS PAN SEASONAL MENU

by Dean Anthony Gratton

### HEADING FOR A BLUETOOTH BREAKTHROUGH

So says Jason Adams of T-Mobile

## EDITORIAL CONTACTS

### INCISOR IS PRODUCED/DISTRIBUTED BY :

Click I.T. Limited  
[www.incisor.tv](http://www.incisor.tv)  
Hampshire Gate, Langley, Rake  
Hampshire GU33 7JR, England  
Tel: +44 (0)1730 895614

### CONTACT DETAILS:

Publisher/Editor-in-chief:  
Vince Holton · [vholton@incisor.tv](mailto:vholton@incisor.tv)  
Telephone: +44 (0)1730 895614

Sales & Business Development:  
Mike Knivett – [mike@incisor.tv](mailto:mike@incisor.tv)  
Telephone: +34 667 204629

Contributing writers:  
Rebecca Russell, Manek Dubash,  
Dean Anthony Gratton  
Paul Rasmussen, Mads Oelholm.

Views expressed within are those of the Incisor editorial and management representatives, and of the representatives of sponsor companies. Incisor is distributed on a monthly basis to companies and individuals with an interest in short range wireless technology. Subscribe to Incisor free of charge at: <http://www.incisor.tv/subscribe.php> Should you wish to stop receiving Incisor, please send a message titled 'UNSUBSCRIBE' to: <mailto:incisor@incisor.tv>

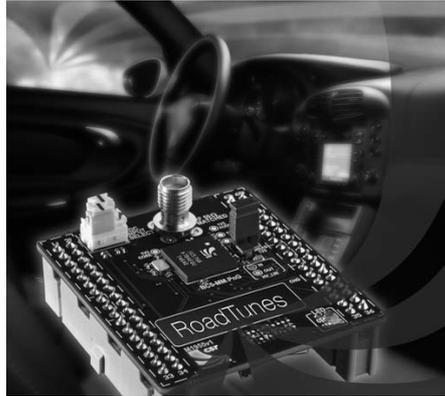
The Bluetooth word mark and logo are registered trademarks and are owned by the Bluetooth SIG, Inc. Incisor and the Incisor brandmark are trademarks of Click I.T. Ltd. All other logos and trademarks are the property of the relevant companies.

### Industry feedback:

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

**Alan Woolhouse,**  
**VP Marketing Communications**  
**CSR**

# news



## Bluetooth SIG pursues counterfeiters

The Bluetooth Special Interest Group (SIG) recently announced that raid actions have successfully been conducted against Dong Zhou Technology Co Ltd and Shenzhen HTC Electronic Co Ltd in 2008 with thousands of counterfeit Bluetooth wireless technology enabled products and components infringing upon the Bluetooth SIG's registered trademarks being seized.

The legal enforcement action was a joint cooperation between Bluetooth SIG, Shenzhen Public Security Bureau and Shenzhen Technical Supervisory Bureau. According to information provided by the relevant departments, over 4,000 units of counterfeit Bluetooth headsets and thousands of related counterfeit electronic parts and components were found at the premises of the suspected company – Dong Zhou Technology Co Ltd in Shenzhen. The case had been heard and those who were involved were charged with administrative penalties of over hundreds of thousands yuan. On June 21 this year, the Bluetooth SIG cooperated with Shenzhen PSB in conducting a raid against Shenzhen HTC Electronic Co Ltd and seized 5,000 counterfeit Bluetooth enabled mini USB adapters which carried the Bluetooth and "B Design" trademarks. The case has been transferred to the Public Security Bureau for possible criminal prosecution.

Both Shenzhen PSB and Shenzhen TSB reacted positively on the raid actions against the infringers in respect of the counterfeit Bluetooth products and their misuse or infringement of Bluetooth trademarks.

"The events indicate that Chinese Authorities have shown determination to curb actions of infringement. The Bluetooth SIG believes that infringement not only hurts the image and equity of the global royalty-free standard, but also consumers who unknowingly purchase counterfeit Bluetooth wireless technology products which

ultimately fail to meet their expectations for interoperability and quality." said Mike Foley, executive director of the Bluetooth SIG.

## CSR launches second automotive car kit dev platform

CSR is shipping RoadRunner2, the second in its range of designs for Bluetooth in-car hands-free kits. RoadRunner2 is a generic development platform based on CSR's BlueCore5-Multimedia Bluetooth silicon, and allows OEMs to develop hands-free kits.

CSR told Incisor that RoadRunner2 is the first design to offer Bluetooth version 2.1 + EDR for automotive applications, and now includes CSR's Clear Voice Capture (CVC) echo cancellation algorithm to provide excellent audio quality despite the environmental demands. It also supports FM when the hands-free is streamed to the car radio.

RoadRunner2 is capable of receiving music from mobile phones or MP3 players. In addition it can receive music from different sources such as an SD Card or an audio jack-In, and then transmit to the speakers or via FM to the car stereo system.

RoadRunner2 supports Phone Book Access Profile (PBAP) and can also retrieve phone book entries from mobile phones that do not support PBAP by storing the phone book entries in a Serial Flash memory. The digital signal processor (DSP) is used to quickly show the caller's name for an incoming call.

CSR's BlueLab configuration software is included as part of the RoadRunner2 package, allowing designers to alter elements of their final product including flash parameters, PIO assignment to buttons, MMI and ring tones.

"We have already launched RoadTunes, a reference design for easily adding Bluetooth functionality to PNDs and factory-fit car

multimedia systems. We confidently expect RoadRunner2 to be every bit as successful as its predecessor, driving a new standard of performance and feature set into the growing aftermarket car kit hands-free market," said Rafik Jallad, Vice President of CSR's Automotive Strategic Business Unit.

## Open Handset Alliance adds members

The Open Handset Alliance, the Google-backed group of companies that has aligned itself with the Android Open Source platform, has added 14 additional companies to its membership. The new members are: AKM Semiconductor Inc., ARM, ASUSTek Computer Inc., Atheros Communications, Borqs, Ericsson, Garmin International Inc., Huawei Technologies, Omron Software Co. Ltd, Softbank Mobile Corporation, Sony Ericsson, Telega AB, Toshiba Corporation and Vodafone.

New members will either deploy compatible Android devices, contribute significant code to the Android Open Source Project, or support the ecosystem through products and services that will accelerate the availability of Android-based devices.

An Open Handset Alliance spokesperson commented that 'members' continued contributions to Android give everyone in the mobile ecosystem a free and complete mobile platform to build Android devices, and that as a result, consumers around the world benefit from a superior mobile experience that features less expensive devices, more compelling services, rich Internet applications, and easier-to-use interfaces'. OK.

Nobody seems too blown away by Android yet, and T-Mobile's G1 handset is not really blowing skirts up at the moment. However, it would be a fool that bet against Google's ability – and determination – to make Android stick in the long term. They just need to get a better PR agent, as current releases are full of New Age, hippy guff.

# news



## Bluetooth SIG site helps consumers match Bluetooth devices

The Bluetooth Special Interest Group (SIG) has launched a new consumer tool on Bluetooth.com, the Bluetooth Gadget Guide, to help consumers match their current Bluetooth enabled devices to companion products.

The Guide helps users find products based on the gadget they already have, gives instructions on how to connect gadgets, and shows what gadgets have capability to print, stream stereo music, transfer data and more with Bluetooth technology.

"A single Bluetooth enabled gadget is like one hand clapping – it doesn't do the trick. But put two hands – or two gadgets – together and the outcome is a fantastic experience. What we have created is a comprehensive way for consumers to find the perfect Bluetooth products to achieve the exact wireless experience they are looking for," said Michael Foley, executive director of the Bluetooth SIG. "The Bluetooth Gadget Guide works in symphony with our Product Directory and Experience Icons to ensure a positive Bluetooth experience."

Using a simple three-step process, the Bluetooth Gadget Guide walks consumers through selecting the two Bluetooth enabled products they are interested in, then supplies product descriptions, information on all the Bluetooth experiences possible with the pair of devices, and product availability for each device. Users can browse available gadgets by scrolling through product pictures and descriptions. Filters allow consumers to search by a specific Bluetooth device or by experience, such as streaming music or wireless gaming. Visitors will be able to choose from a comprehensive list of products or type in their product for a personalized search. The Bluetooth Gadget Guide also

gives consumers access to complete pairing instructions for their specific combination of products, avoiding the hassle of following two instruction manuals to pair a set of devices.

The Bluetooth Gadget Guide is a neat tool – have a look at it at: <http://gadgetguide.bluetooth.com>.

## New Broadcom combo chip

Irvine, California based Broadcom is aiming its new silicon solution at the media and data applications market. The chip integrates Broadcom's 802.11n Wi-Fi, Bluetooth and FM technologies on a single silicon die.

Broadcom suggests that combination chips will account for nearly one-third of all wireless connectivity solutions shipped in 2012, and boasts that it will introduce a new combination chip every 60 days over the coming months.

The BCM4329 from Broadcom includes 802.11n for mobile devices, with up to 50 Megabits per second (Mbps) of actual wireless throughput, Bluetooth and both FM transmit and receive capabilities. The chip employs space time block coding (STBC), an 802.11n feature that enables a mobile device to maintain a connection with an access point anywhere within an expanded coverage area.

"Handset manufacturers are excited about the opportunities that 802.11n brings, but they are looking for single antenna solutions that meet stringent size and power requirements," said Chris Bergey, director of Broadcom's embedded WLAN line of business. "The BCM4329 is another example of how Broadcom is driving the industry towards combination solutions, not by delivering a one-size-fits-all technology, but by integrating the right mix of technologies for the right applications."

The BCM4329 combination chip is now sampling to what Broadcom describes as 'early access customers' and is scheduled for production quantities in 2009.

## Portable music devices are the fastest-growing Bluetooth market

While cellular handsets/headsets continue to make up the largest share of the massive Bluetooth market, according to a recent report from ABI Research portable music devices constitute the fastest-growing segment.

"Cellular handsets continue to account for about 60% of today's 1.2-billion unit market," says senior analyst Doug McEuen, "but the prize for rapid market growth definitely goes to portable music devices. Bluetooth shipments for these products are expected to grow from a mere 550,000 in 2006 to more than 80 million in 2013. That represents a compound annual growth rate of 104%."

While iPods do not yet come with embedded Bluetooth, McEuen credits Apple's iconic music player with continuing to carry this part of the Bluetooth market on its coat-tails. "When looking at the issue of functionality, it becomes clear that Bluetooth is likely to be positioned as a key differentiator that Apple's competitors will use in order to garner market share," he notes. Many other MP3 players do offer Bluetooth and others offer third-party Bluetooth products for the aftermarket.

A further development is the increasing inclusion of music players into cellular handsets. Bluetooth is already a standard feature on most cellular handsets. As music functionality is increasingly incorporated into phones, the logical extension is to provide both the hands-free functionality and music functionality through one headset.

# New movies coming soon to Incisor TV:



## **Incisor TV will film two important new movies at CES 2009**

### **WiMedia Alliance** – Ultra Wideband in 2009

As Ultra Wideband-enabled products reach the market, the WiMedia Alliance provides a comprehensive update on developments in the Ultra Wideband industry, and showcases a series of finished products for the consumer and business markets

### **Bluetooth Special Interest Group / Best of CES**

Incisor TV reviews a year of Bluetooth with Bluetooth SIG executive director Mike Foley, and once again covers the SIG's annual Best Bluetooth of CES contest.

Both new movies will be published on the [www.incisor.tv](http://www.incisor.tv) web site following CES, and will be promoted in the February 2009 issue of Incisor.

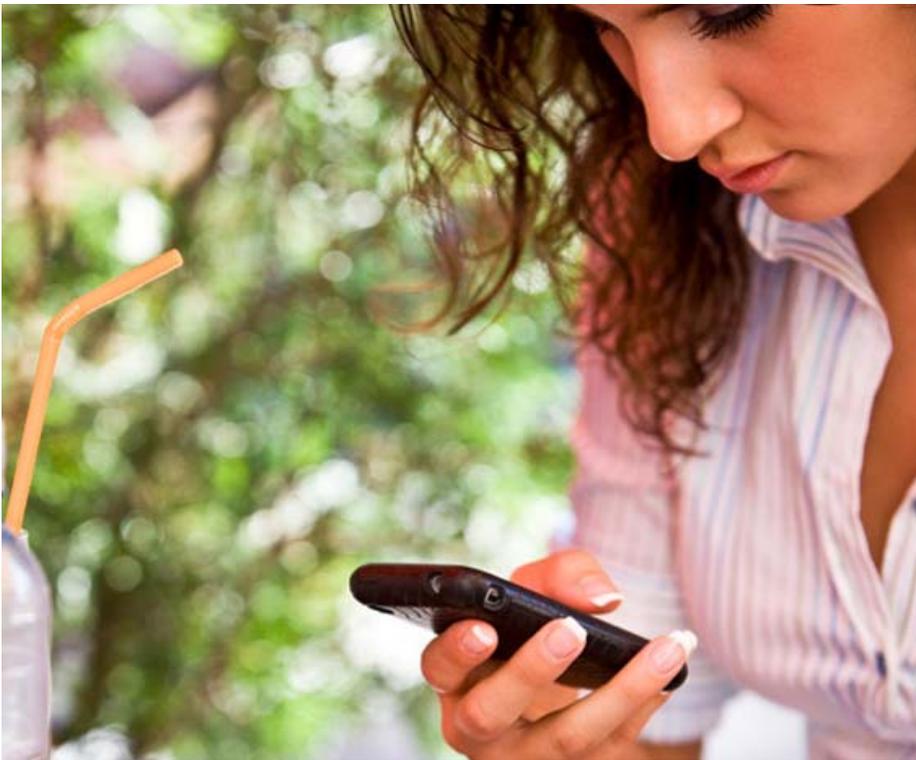
***INCISOR.TV***

A FINGER ON THE PULSE OF WPAN

# Heading for a Bluetooth breakthrough

## Aligning mobile terminal Bluetooth requirements across the industry

by Jason Adams CEng MIET, T-Mobile International



**When the Open Mobile Terminal Platform (OMTP) published a document entitled “Local Bluetooth Connectivity v1.0”, it became a milestone in the history of Bluetooth technology, SIGNifying a step change towards a more harmonised and customer-friendly approach within the industry. Publishing this set of mobile terminal Bluetooth requirements, aimed at SIGNificantly improve customer experience and expected functionality when using Bluetooth from a mobile terminal, gave the industry a focal point.**

Traditionally Bluetooth recommendations were not aligned between terminal vendors and the various mobile operators.. Now, with this new document, that’s all changed. In future, Bluetooth

should become more of a tick box technology for mobile operators, consisting simply of two classes, “basic” and “advanced”.

Since its inception into mobile technology Bluetooth has been evolving. It is now a technology with more than 30 different profile functionalities however; a lack of a recommended common design has produced a large number of scenarios where the variants are incompatible across Bluetooth products. This leads to various interoperability issues impacting customers as well as terminal testing efforts. The mobile industry, led by T-Mobile, was eager to address the issue and change the situation. The OMTP seemed just the right place to do it, bringing together both mobile vendors and operators in an open forum.

I recall Ian Macnamara, Chair of the Bluetooth SIG once saying: “For the first time, a document has been developed and approved that defines a minimum set of Bluetooth hardware and profile requirements.”

By securing buy-in from the Bluetooth SIG, Nokia, Sony Ericsson, Freescale, Qualcomm, AT&T, Telecom Italia, Telefónica and Hutchison and by taking a commercial view and considering the vendors’ position right from the start, the Bluetooth industry has defined an innovative approach that benefits customers, vendors and operators alike.

### Diving into the details

The recommendations specified in the document support a number of common Bluetooth use case scenarios including

- connecting the terminal to a stereo or mono headset
- control of streamed music sources from computers, music players or other devices
- transferring digital files between a variety of devices
- connecting to a printing device
- enhancing Bluetooth performance in cars

General recommendations, that are common to both basic and advanced classes, specify support for core version 2.0, eSCO as well as calling for simultaneous multi profile support as standard. Demonstrating evidence that the Bluetooth SIG’s qualification program has been followed, with adherence to the security requirements.

The basic class of profile recommendations sets a minimal suite of profiles that allows for audio and data connectivity, together with legacy support for older devices that is aimed at entry level mobiles without media players. While the



advanced class of profiles adds support for stereo audio, media player remote control, printers and imaging as well as the fairly new profiles for in car usage that cover SIM and phonebook support.

### Moving forward

With the Bluetooth industry constantly evolving, it's no surprise that the future requirements for core version 2.1 and the yet to be adopted profiles to support this version, are given mention ahead of their pending release together with a suggested target release date for both accessories and mobile by the end of 2009.

The latest OMTP document not only discusses technical advice, but also highlights a number of marketing initiatives to improve customer transparency. For instance, it recommends the use of Bluetooth SIG's Experience icons on product packaging to simplify by using icon's Bluetooth features and functionalities. This seems like a no-brainer. Making it much easier for the customer to choose Bluetooth enabled devices that support exactly the features they are looking for must be a worthy addition, and to see such simple advice in a technical document is great.

For those tech experts in the testing arena, the interoperability testing approach is kept simple with no additional added test layers. The recommendations suggest that the Bluetooth SIG device to device and E-IOT test cases are used as part of the device qualification. Again, a simple recognition marketing tool is in the pipeline, and I am looking forward to the Bluetooth SIG providing an 'OMTP certified' test plan, which should align everyone to a common mobile test plan whilst speeding up the test plan deSIGN stage.

### The Bluetooth highway

Despite the successes achieved, work is not over yet. T-Mobile will now try to further strengthen the relationship between the car industry and the OMTP local connectivity forum, for enhanced Bluetooth performance in cars. Meantime, the Bluetooth SIG will further align recommendations and make sure that they are widely implemented across the industry.

It's common knowledge that Bluetooth performance in cars is often not satisfactory, and the industry is tackling this issue. I guess that's a future article. My vision however, is that - in the near future - cars will seamlessly and wirelessly detect mobile phones via Bluetooth, read

song lists, play back songs to the car radio, while the music automatically pauses when a call comes in.

Until then, the car manufacturers will continue to improve on sound quality and connectivity and creating useful tools for using your mobile while driving, and the government will do what it can to make it difficult.

All the while, the Bluetooth SIG, T-Mobile and the OMTP will focus on further exploring the Bluetooth world and stretching its limitations to satisfy the customer in providing an exciting and improved customer experience.

### Background information:

#### Open Mobile Terminal Platform (OMTP)

Founded in June 2004, the OMTP is an operator-led industry forum with the aim of simplifying the customer experience of mobile data services and improving mobile device security. Despite its operator roots, OMTP has grown to serve the industry as a whole, and now draws its membership and sponsors from some 35 companies. The complete mobile value chain is represented and includes operators, handset manufacturers, chip makers, content providers, software, and OS developers. T-Mobile engages in the OMTP on the steering level as well as in various working groups.

The OMTP looks specifically at device-related issues that benefit from pre-competitive operator collaboration. Its basic mission is to make life easier, less confusing and less complicated for consumers.

#### Bluetooth Special Interest Group

The Bluetooth SIG is a privately held non-profit trade association. Founded in 1998, its main tasks are to publish Bluetooth specifications, administer the qualification program, protect Bluetooth trademarks and generally try to evangelize Bluetooth wireless technology.

Read more ...

- OMTP document "Local Bluetooth Connectivity v1.0"
- OMTP platform (Link to <http://www.omtp.org/About.aspx>)

About the Bluetooth Special Interest Group (link to <http://www.bluetooth.com/Bluetooth/SIG/>)



Jason Adams,  
CEng MIET,  
T-Mobile  
International

# 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

#### 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](#)

[CES 2008 - Profile of Parrot](#)

[Introducing Incisor](#)

[2007 Wireless Symposium](#)

[Bluetooth / Wibree launch event \(full version\)](#)

[Incisor TV overview: the Bluetooth SIG / Wibree Forum merge](#)

[Best Bluetooth of CES 2007](#)

[Incisor profile: Icron Technologies and Extreme USB](#)

[Wireless USB special - Introducing Wireless USB](#)

[Wireless USB special - Wireless USB in use](#)

[Wireless USB Special - Regulatory, approvals and interoperability](#)

[Wireless USB special - The future for Wireless USB and UWB](#)

[Wireless USB special - Wireless USB at CES 2007](#)

[Vince Holton introduces the High Speed Bluetooth Special Issue](#)

[Anders Edlund of the Bluetooth SIG - Bluetooth and UWB combined](#)

[Robin Heydon, CSR - Bluetooth & UWB - The semiconductor company perspective](#)

[Motorola's Steve Deutscher examines High Speed Bluetooth mobile concepts](#)

[Motorola video - Jordan's morning](#)



# Health devices: removing the wires to improve the care

By Robin Heydon, CSR



**Wireless technologies in medical devices is not a new concept but given the maturity of Bluetooth technology, the market for applications for both classic Bluetooth and Bluetooth low energy wireless technologies in the medical sector is now expected to be enormous. As the industry leader in Bluetooth technology CSR is at the forefront of new innovations and products in this field.**

Bluetooth has been selected as the wireless PAN technology by the Continua Alliance for connecting health devices wirelessly. The Bluetooth Health Device Profile (HDP) has been designed to allow wireless connection of personal health products such as blood pressure monitors, weighing scales, heart rate monitors and many others to mobile phones, portable media players and PCs that already include Bluetooth technology. Health data transferred wirelessly to a mobile phone or other device can be stored or forwarded via the internet to a health care provider or personal health website to be analysed. This data can also be used to monitor health conditions to prevent major illnesses

or used to track progress if a person is trying to loose weight or get fitter.

For health applications requiring constant monitoring, CSR sees a perfect fit for the ultra low power Bluetooth low energy. Bluetooth low energy is set to open up a whole new class of wireless connectivity. The ultra low power technology offers huge potential for health and fitness products in devices such as blood glucose meters that connect to a user's mobile phone or computer to record blood glucose levels over time, helping with diabetes sufferers. Other devices that could benefit from Bluetooth low energy include temperature sensors, health watches and heart rate monitors. With their relatively low data requirements and with battery life measured in years, Bluetooth low energy is ideal for these applications.

The consumer healthcare market could significantly improve the healthcare for many individuals, with patients benefiting from such continual monitoring and recording of a health issue.

CSR is driving the development and application of Bluetooth low energy and today is the only company with silicon ready to support the new low power technology. CSR launched its Bluetooth low energy chip in June, bundling the value of Bluetooth low energy with other technologies in the 'Connectivity Centre' in the company's BlueCore7 IC. →

CSR has already demonstrated Bluetooth low energy inside BlueCore7 working in a mobile phone to show how it can interoperate with weighing scales and temperature sensors. The consumer healthcare market offers enormous potential for the new low power technology, and these recent demonstrations have proven to the industry that as soon as the Bluetooth low energy specification is complete, (expected in early 09) the technology will be quickly and easily integrated into handsets.

Bluetooth is the most successful wireless technology in use today, renowned for offering a robust and reliable low power short-range wireless connection. Bluetooth has long been used in automotive applications where quality and reliability is of the highest levels. Bluetooth low energy is a simple evolution of Bluetooth and has been built on the same core values that made classic Bluetooth a global success: low power, low cost, global standardisation and robustness.

By offering the reliability of Bluetooth with even longer battery life measured in years, Bluetooth low energy can be used in wireless patient monitoring devices without the fear of communications breaking down or the battery running out – both of which could obviously have severe consequences. A key requirement for medical devices in particular is reliability; there is little margin for error in this field.

Because CSR's Connectivity Centre vision encompasses a wide range of technologies around a Bluetooth hub, this

means other technologies can be quickly and easily brought to medical applications at a very low cost.

The potential for other Connectivity Centre technologies in medical applications are limited only by the imagination. GPS technology (as built into CSR's BlueCore7 IC) could be used for "Geo Fencing" type medical applications. Geo Fencing allows people at risk to roam freely within a pre-defined area. The GPS technology can be used to alert a carer if a patient strays from the "safe" area. This allows patients to have more safe freedom and not be house-bound, but at the same time enabling a better quality of life.

Wi-Fi can be used to enable data recorded on phones, PCs and PMPs to be sent to personal healthcare websites such as the Microsoft Health Vault or Google Health for online analysis and storage or even sent direct to your health care service provider. This creates a great closed loop system whereby the health care provider can give instant feedback to the patient by providing positive messages if the person is improving their condition, or hints and tips if their condition is not. A good example is providing tips on a healthier diet or exercise tips if weight is trending upwards.

It is envisaged that NFC will be used in such products to provide easy pairing between medical device and PCs to enable easy, secure data collection. This is on top of the cashless payment opportunities.

CSR's Connectivity Centre frees medical device designers to focus on innovation in their own field, and to implement value-added features that differentiate their end products.

sponsored contribution



## Snippets

### UK company defies funding drought

Icera, a wireless soft modem company, has secured \$70M of new financing. A total of \$60M will be provided as new equity by current investors in Icera, including Atlas Venture, Balderton Capital, Accel Partners, Amadeus Capital Partners and 3i plc and \$10M of debt financing has been provided by ETV Capital SA and MMV Financial Inc. Icera's HSPA silicon and software has been selected by several major mobile operators and product companies supplying the mobile broadband market.

### Broadcom to showcase DLNA at CES 2009

Broadcom will be showing its support for Digital Living Network Alliance (DLNA) technology with a mock-up of a connected home at CES 2009. The demonstration will allow users to share and access digital media across a variety of wired and wireless connectivity technologies, such as MoCA (yes, that is coax – sorry), Wi-Fi and Ethernet, and will illustrate how consumers can share and stream digital content (including DVR recordings, music, photos and videos) between consumer electronics (CE) devices, mobile handsets, set-top boxes (STBs) and personal computers (PCs) anywhere throughout their homes.

Broadcom says it is driving DLNA support into a wide range of its system-on-a-chip (SoC) solutions for CE devices, mobile handsets, STBs and PCs.

### New report into wireless medical opps

IMS Research and InMedica – the medical electronics division of IMS Research, are commencing work on a new report entitled 'Wireless Opportunities in Patient Monitoring - 2009 Edition'. The report evaluates the potential market for the opportunities for wireless technology in patient monitoring.

### Nokia acquires Symbian Limited

Nokia has completed its offer to acquire Symbian Limited. All conditions to Nokia's offer to acquire Symbian Limited have been satisfied and it has received valid acceptance of greater than 99.9% of the total Symbian shares that Nokia did not already own. A statement from Nokia said that the closing of the offer was a fundamental step in the establishment of the Symbian Foundation, announced on June 24, 2008 by Nokia, together with AT&T, LG Electronics, Motorola, NTT DOCOMO, Samsung, Sony Ericsson, ST-NXP Wireless, Texas Instruments and Vodafone.

Wireless Data Coordinator  
– VERIZON WIRELESS

Chief Technology Office  
– CONCRETE LOGIC

Distinguished Member of the  
Technical Staff  
– MOTOROLA

RF System Architect  
– ARTIMI

Senior Engineer  
– SAMSUNG ELECTRO-MECHANICS

Technical Director  
– EUREX COMMUNICATIONS

Short Range W/less Lead Eng.  
– FRACTUS

Senior Analyst  
– STRATEGY ANALYTICS

Chief Application Engineer  
– PHILIPS SEMICONDUCTOR

VP of Marketing & Business  
Development  
– ZIGBEE ALLIANCE

Design Engineer  
– CSR

Business Dev. Manager  
– TEXAS INSTRUMENTS

R & D Engineer  
– HEWLETT PACKARD

Director, Seamless Mobility  
– MOTOROLA

Procurement Manager  
– BENQ

Systems Engineer  
– DAIMLER CHRYSLER

Principal Design Engineer  
– PANASONIC

Director, Product Development  
– MOTOROLA

Research Engineer  
– LG INNOTEK

Software Engineer  
– DELPHI DELCO ELECT.

Corporate Strategic Planning  
– LSI LOGIC

Fellow, Office of the Chief  
Technology Officer  
– LSI LOGIC

Equity Analyst  
– HANDELSBANKEN

Senior Electrical Engineer  
– MOTOROLA

Hardware Engineer  
– GN MOBILE, GN NETCOM

Connectivity Manager  
– AMD

Principle Analyst  
– AUTOMOTIVE – iSUPPLI

Principle Engineer  
– MEDTRONIC

Digital Cellular RF Product  
Line Manager  
– ANALOG DEVICES

Senior Applications Engineer  
– MOTOROLA

Project Manager  
– SCHNEIDER ELECTRIC

Director, After Market Service  
– GN NETCOM

Director, R & D and Business  
Development  
– WEARNES TECH SOLUTIONS

Senior Product Manager  
– NOKIA

Director, Strategy & Business  
Development  
– MOTOROLA

Product Manager  
– BELKIN CORPORATION

Software Development  
Manager  
– CISCO SYSTEMS

Gen Mgr, Connectivity Div.  
– STMICROELECTRONICS

CEO  
– INNOVISION RES. & TECH.

Strategic Marketing  
– STMICROELECTRONICS

Marketing, Low Power W/less  
– TEXAS INST., NORWAY

Director Product Development  
– GENNUM

Analyst  
– CREDIT SUISSE

Grant Holder  
– TELEFONICA

RF Product Manager  
– MURATA

Sen. Procurement Mgr.  
– PLANTRONICS

CEO  
– PLENUM WIRELESS

Confidential Agent  
– PHILIPPINE BUR. OF IMMIGRATN.

Software Engineer  
– SENNHEISER COMMUNICATIONS

Design Engineer  
– TRIMBLE NAVIGATION

Executive Director  
– OPEN SPECTRUM FOUNDATION

Software Engineer  
– SONY ERICSSON

Development Engineer  
– PARROT

Security Engineer  
– U.S. DEPARTMENT OF STATE

Director  
– WIQUEST

President & CEO  
– USA SIGNAL TECH.

Technical Manager,  
Bluetooth Qualification Board  
– SONY ERICSSON

OSC  
– U.S. NAVY

President  
– TIBA MEDICAL

Lecturer  
– NANYANG POLYTECHNIC

R & D Project Leader  
– GN NETCOM

R & D Engineer  
– HEWLETT PACKARD

UWB Marketing Manager  
– STMICROELECTRONICS

Senior Engineer  
– SAMSUNG ELECTRONICS

Technical Strategist  
– LENOVO

ASIC Development manager  
– MICROSOFT

Senior manager  
Audio/infotainment architectures  
– VISTEON CORPORATION

Senior product manager  
– BELKIN

Principle engineer  
– PLANTRONICS

Marketing engineer  
– TEXAS INSTRUMENTS

Senior systems engineer  
– GN NETCOM

Senior system architect  
& standardisation manager  
– NXP SEMICONDUCTORS

R&D engineer  
– FRANCE TELECOM

## WOULD YOU LIKE TO TARGET THE PEOPLE ON THIS PAGE WHEN MARKETING SHORT RANGE WIRELESS PRODUCTS, APPLICATIONS OR SERVICES?

Listed on this page are just a few recent Incisor subscribers, added to a database built over 8 years.

- Incisor covers Bluetooth, Ultra Wideband, ZigBee, Wi-Fi, RFID and NFC.
- Read by an estimated 25,000 readers
- At 1500+ companies.

Incisor is not a consumer publication, and therefore doesn't claim to be read by hundreds of thousands, or even millions. We address those people all over the world that are seriously interested in wireless technology – the decision makers and technology influencers.

### CONNECTING YOUR COMPANY WITH THE INCISOR SUBSCRIBER DATABASE

If you would like to take advantage of the incredible market coverage Incisor enjoys by promoting your company, products and services via sponsored editorial, advertising, web-licensing of content, video profiling and e-marketing to the Incisor database please contact **Mike Knivett at [mike@incisor.tv](mailto:mike@incisor.tv) or call +34 667 204629**

# INCISOR.TV

Manager, Member Relations & Marketing  
– BLUETOOTH SIG

Senior RF Engineer  
– TDK ELECTRONICS

Engineer  
– ALPINE ELECTRONICS

Sen. MarCom Manager  
– SOCKET COMMUNICATIONS

RF Engineer  
– TAIYO YUDEN

Principle IC Architect  
– SILICON & S/WARE SYST.

Patent Engineer  
– GN STORE NORD

Researcher  
– EC JOINT RESEARCH CENTRE

Director Product Development  
– GENNUM

Analyst  
– CREDIT SUISSE

Patent Engineer  
– GN STORE NORD

Researcher  
– EC JOINT RESEARCH CENTRE

# Anoto Bluetooth pen helps aeroplanes take off on time

Long-term Incisor readers will remember Anoto as the Swedish company that invented and launched a digital pen and paper technology back in 2001 that used Bluetooth as the backbone wireless company. We thought it was really clever – heck, we thought it was so clever we launched a magazine about it – Apendig (clever name, eh!). You can see the first issue [here](#). Well, seven years later, Apendig may no longer be with us, but Anoto is still a force to be reckoned with, even if it has taken a while to get off the ground (sorry about the awful, story-related pun). Read on, and you will learn how one major customer – British Airways – is making use of Anoto's still very clever solution.

British Airways wanted to find a way to speed up load control communication to avoid flight delays and lost take-off slots and get happier passengers. Strict load control was time-consuming. Before a pilot can take off, a rigid procedure is carried out, to ensure that the aeroplane is neither overloaded, nor out of balance. Passengers, baggage and cargo need to be distributed correctly, depending on the aircraft type and the passenger seating arrangements.



Loading calculations are made before any baggage is placed in the hold (cargo area of the aircraft), but the actual loading of the aircraft always varies slightly from these calculations.

The reasons are: extra baggage being checked-in, changes in fuel levels, as well as in the number of passengers, and passenger bags being removed, should passengers fail to board the aeroplane.

These changes must be communicated securely and quickly to the airline's Central Load Control department, so that they can transmit the information directly into the cockpit for the pilot to see. The changes are usually illustrated in the form of annotated diagrams.

Before, an aircraft dispatcher sent this information to Central Load Control by fax or telephone, or sometimes even handed the paper in personally. For aeroplanes parked far away from the terminal on a remote stand, this was often impractical

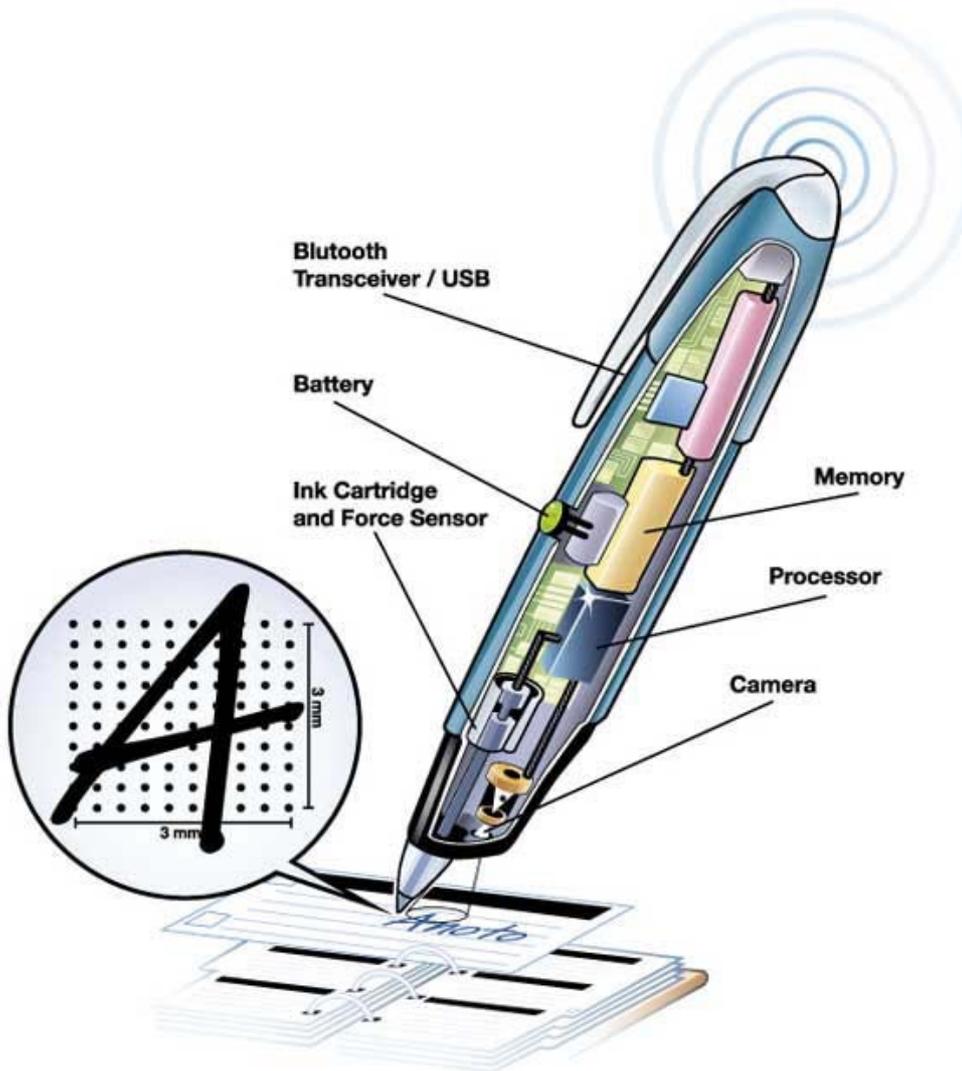
and moreover, there was a considerable risk of delays, missed take-off slots and as a result, disgruntled passengers.

## **New solution employed at Heathrow and Gatwick Airports**

British Airways has now found a way to speed up the load-control process, with a 100% audit trail, near real-time data transmission, and minimal disruption to existing working practices.

Sysnet, an Anoto Gold Partner, has worked with British Airways to develop a solution named TRIP (TurnRound Intelligent Pens), which is based on Anoto's Digital Pen and Paper technology. At first, British Airways considered trying solutions with PDA:s or laptops, but in evaluations, the digital pen was found to be more appropriate, due to its pocket size and longer battery life. Moreover, it enabled a paper copy of the load sheet to be kept, in compliance with legal requirements.





During 2005, a pilot was initiated which proved the digital pens as robust, user-friendly tools, well suited for use in any type of weather conditions. In early 2006, British Airways accepted Sysnet's tender to develop the solution and today, it is used by over 300 turn-round coordinators to manage all of the airline's departures from London's Heathrow and Gatwick Airports.

#### How it works

With the TRIP solution, the aircraft dispatcher is replaced by a turn-round coordinator, using a digital pen. The digital

pen contains a small, built-in infrared camera that stores the handwritten information. With the pen, the load data is registered into an A4-size form with an almost invisible dot pattern. Then, the information is transferred via a Bluetooth-enabled mobile handset to the Central Load Control servers, where it is displayed in the form of a webpage. This process only takes a few seconds and is carried out by the turnround coordinator at the side of the aircraft, regardless of where it is parked.

"In addition to the user-friendly, robust and highly mobile nature of the solution itself, the instant feedback that the mobile

handset gives the turn-round coordinator is a really useful feature. It provides certainty that the information has been entered and also properly transmitted – in an area where such certainty is an absolute "must" for BA", says Neil Clark, Head of IT, Airline Operations, British Airways Information Management.

As the turn-round coordinator does not need to move away from the aircraft at any time during the loading, the process has become faster, more efficient and easier than before.

Digital pens part of change process TRIP has been operational at London's Heathrow and Gatwick Airports for the last 18 months and deployment was extended to Heathrow's Terminal 5 building when British Airways moved its operations to the new terminal earlier this year.

*"The digital pens and the new system have modernised the way we do things and brought us one step closer to a harmonised way of working, at Terminal 5",*

says Lynda Findlay, Senior Coordinator, Planning and Control, at British Airways.



## Snippets

### Bluetooth

#### Mike Foley recognized as 'mover and shaker'

Well, those members in the community that have seen him on the dance floor already know that. But now, Bluetooth SIG executive director Mike Foley's talents have been recognised elsewhere, and he has been

named one of the top wireless influencers of 2008 by RCR Wireless. Foley was recognized for his significant impact on the wireless industry and his efforts to change how business is done today through Bluetooth

wireless technology. The award celebrates a productive 2008 for the 11,000 member strong association, and paves the way for a successful 2009 with two new versions of the Bluetooth specification to be unveiled.

# uwb / wireless usb news



## Wireless HDTV vendors chose tech

When it comes to considering a data channel for wireless HDTV, we've spent a lot of time looking at Ultra-Wideband, however, as a recent report from ABI Research notes, other solutions are in the wings.

Two industry groups have emerged to promote 5 GHz and 60 GHz solutions. Amimon, around whose technology the 5 GHz platforms are based, formed the WHDI Special Interest Group, which has been joined by Hitachi, Motorola, Sharp, Samsung and Sony. Hedging their bets, the latter two vendors are also members of the competing industry body, WirelessHD, which promotes the 60 Hz approach designed by SiBEAM, Inc. WirelessHD also includes Intel, LG Electronics, Matsushita Electric, NEC, and Toshiba.

Although consumer electronics vendors continue to line up behind the two proposed standards for wireless high definition television connectivity, and some are "putting their money where their mouths are," most retailers shelves have yet to see any products.

Amimon recently announced that it has now shipped 100,000 of its chipsets. Many of those are going into high end TVs while Sony has a Bravia wireless adapter available online and in limited retail outlets. "Amimon is in fact making real progress in promoting its solution," says ABI Research principal analyst Steve Wilson.

"SiBEAM has recently completed a new round of fundraising, successfully securing the participation of two major backers, Panasonic and Samsung," Wilson continued. "Broadcom has also joined the consortium. Meanwhile Mitsubishi has announced its choice of the Amimon (5 GHz WHDI) chipset. All these are positive signs from major stakeholders in this incipient market."

"Incipient" is still largely the operative word, however. Despite earlier indications that some products would be shipping by now, the promised offerings from Belkin and Monster are still conspicuous by their absence, and appear to have slipped into Q1 2009 or later. "Sharp and Hitachi are shipping high end consumer TVs with wireless connectivity in Japan," Wilson notes. "However, in the US, no one but Sony has yet been able to bring any of these technologies to the consumer market."

There are some juicy-looking, low-hanging grapes in the Wireless HD TV market, and as the consumer electronics companies search for new ideas to persuade people to spend money, it is no wonder that there are several technologies competing to secure the lion's share of the market. Incisor will take a closer and more in-depth look at the contenders in the New Year.

## Alereon PHY certified for WiMedia bandgroup 6

The WiMedia Alliance has officially certified Alereon's AL5000 Wireless USB chipset as one of the first UWB physical layer chipsets (PHYs) for operation in Bandgroup 6 (7.4 to 9.0GHz). The chips from Alereon are among the first certifications to support the WiMedia Spectrum Extension Release (SER) announced in August.

"Upper bandgroup support is critical to the establishment of UWB as the worldwide standard for Personal Area Networks (PANs) in the PC, CE and mobile market segments," said Stephen Wood, WiMedia president. "Customers looking to use standard products today that are both in volume production and known to meet the WiMedia specifications are now assured these products can meet their requirements."

The SER specification is an extension to previous WiMedia specifications and provides support for worldwide operation on hopping channels above 6GHz to address mobile applications in particular (including Bluetooth) on a global basis.

In addition, the Alliance also announced that Alereon was one of the initial chipsets qualified as an official PHY test bed for bandgroups 1 (3.1 to 4.8GHz) and 3 (6.3 to 7.9GHz). These test beds are precursors to the setup of independent test labs (ITLs) to perform WiMedia Certification testing. In turn, ITLs can offer more widely available Certification testing both globally and on demand.

David Shoemaker, vice president of engineering and operations at Alereon commented: "Our bandgroup 1, 3, 4 and 6 products have been in production for more than a year and this validates the fact that Alereon's products meet the stringent requirements customers need to bring their products to market today."

### ... achieves FCC certification for Wireless USB Half-MiniCard

Alereon has also received FCC modular certification for its AL5708 Worldwide Wireless USB Half-MiniCard. Alereon claims that the AL5708, which provides Wireless USB connectivity for laptops and desktop PCs, is the first and only FCC approved Wireless USB embedded notebook solution for use in UWB bandgroups one, three and six.

Alereon's AL5708, which is PCI Express (PCIe) type H2 compliant, is based on the AL5000 family chipset that covers the entire UWB spectrum from 3.1-10.6 GHz. In addition, the AL5708 supports bi-directional, isochronous data transfers both in and out allowing manufacturers to support common consumer devices such as USB speakers and webcams.

# Filtering the noise around Ultra Wideband

Jeff Chang, Vice President of Marketing,  
Staccato Communications



Typically when we talk about noise filtering techniques for Ultra Wideband (UWB) technology, we are referring to topics such as band pass filter design and RF rejection, but over the last month or so, the discussion of “noise” in terms of UWB has been around recent developments with respect to companies developing the technology. WiQuest, an early leader in the UWB space, announced at the end of October that they were unable to raise a new round of funding and had to shut its doors. On the heels of that news were also reports that Intel had decided to shutter its Ultra Wideband Networking Operations (truth in advertising, they had actually decided to do so months prior to the fanfare of articles). There have been claims that “UWB is dead” or at least has one foot in the grave. Others have touted that market attrition and consolidation is not only expected, but required, and the promise and value of UWB as a high-speed, low-power, short-range wireless technology remains unchanged. It’s been a long road to get where we’re at for sure, but it’s also important to take some perspective when forming an opinion on the prospects of UWB. Filtering the “noise”, if you will. The resulting signal, as you’ll see, remains very promising for UWB.

## Let’s start at the beginning

In February 2002, the FCC authorized the unlicensed use of UWB in the 3.1GHz to 10.6GHz spectrum. A battle ensued in the IEEE standards committee between two camps to adopt their version of UWB. The Multi-Band OFDM Alliance (since merged with the WiMedia Alliance) had defined and promoted a Multi-Band OFDM technology, while a group known as the UWB Forum promoted a direct sequence pulse-based radio design. Without going into details of the differences of the technologies or the politics involved in the standardization effort, ultimately neither was adopted due to both camps’ inability to acquire the necessary votes. In the spring of 2006, the IEEE task group was officially disbanded. The UWB Forum is now defunct, while the WiMedia Alliance continues to grow today with over 350 member companies across multiple market segments. WiMedia UWB technology specifications have been adopted by the USB-IF for Certified Wireless USB as well as adoption as official ECMA standards. The Bluetooth SIG has also announced collaboration with WiMedia to develop next generation high-speed Bluetooth technology. So as a result, a de-facto standard for high-speed

Wireless Personal Area Networking (Wireless PAN) technology has emerged in the form of WiMedia UWB. And as history has shown us with the likes of technologies such as wired USB, which is arguably the single-most successful connectivity technology ever introduced, the lack of an IEEE standard is not a barometer for failure or success.

## Why UWB?

Driven by innovations in mobility, power, and storage capacity, users continue to have a voracious appetite for the latest and greatest in consumer electronic gadgets. Add to that a new world of high definition content and social networking, and it’s no wonder that there is no end in sight to the potential growth of digital electronics, and Wireless PANs will play a key role in how people access, share and enjoy this content rich environment.

A Wireless PAN has a typical range of ~10 meters, and enables simple, secure connections to allow digital devices to communicate with one another at datarates up to 480Mbps. These connections may be mobile as in the scenario where a friend shares his latest digital photos with another friend via their handsets. Or they may be fixed connections as in a home office scenario where all of the peripherals (printer, speakers, monitor, etc...) maintain a wireless connection with the PC.

Whatever the usage scenario, there is a true need for a high-performance, low-power wireless solution that can also achieve the price points to enable high volume applications such as PCs and mobile handsets. These are requirements that are not well serviced by existing wireless technologies. As a comparison, UWB can transmit data up to 200 times faster than existing Bluetooth technology and is 5-10 times more power efficient than Wi-Fi. UWB also does not operate in



the crowded 2.4GHz ISM and 5GHz UNII spectrum thereby making it less prone to interference.

All of this sounds great, right? So why isn't the world completely flooded with UWB-enabled devices?

### A Bumpy Road

Even though the FCC had opened up spectrum for UWB operation, the rest of the world still had restrictions. This prohibited device manufacturers from offering a worldwide compatible solution, a requirement for most of the major market segments. The good news is that today, in addition to the US, UWB operation is allowed in Europe, Japan and Korea with expectation that China will grant approval by the end of the year. As a result, a clear global footprint has been established that can be adopted by products for worldwide operation. The early Gen 1 solutions delivered by the IC vendors, who are ultimately the building blocks for the end products, only supported operation in the lower-end of the spectrum (known as Band Group 1) so did not support this footprint. However, we are now seeing solutions on the market that support multiple band groups (specifically Band Groups 1, 3 and 6) enabling a worldwide compatible product.

Another issue with the early Gen 1 solutions, as is typical with any nascent technology, is that the size, power and especially the price points were just too high to enable mass adoption in volume markets. On top of this, due to backward compatible wire adapter protocols for wireless USB, early product performance was less than impressive, delivering only ~25% on the true capability of the technology. Though wire adapters allowed for simple addition of wireless USB capability with little or no changes to existing hardware, customers and users saw the performance as a restriction of the technology in general. However, today we are seeing "native" implementations of wireless USB products that can achieve greater than 200Mbps performance. The other good news is that Gen 2 solutions are hitting the streets that meet the strict requirements of PC, PC peripheral, consumer electronic and mobile handset markets in terms of cost, size and power. Staccato's Ripcord2, the world's first and only single-chip UWB IC implemented in 65nm standard CMOS, is an example of one such solution. In addition, Ripcord2 has been certified by WiMedia in Band Groups 1, 3 and 6 allowing worldwide operation in a single piece of hardware. Markets in the past (we'll look at Bluetooth and Wi-Fi in a second) have required similar "game-changing" technology to move it from the early adoption phase to

the high volume phase, and then eventually to the full ubiquity phase.

### Long History, Short Memories

The news of WiQuest and Intel has certainly caused quite a bit of "noise" for the UWB industry. And first and foremost, even though these were competitors to Staccato, as WiMedia members they were also friends and colleagues, so we are sad to see them go. They had definitely contributed to the WiMedia effort in many respects, but just as with the news of recent lay-offs of so many companies even outside of the UWB industry, we will find a way to fill the gaps.

However, it is not surprising to see attrition in this or any other market these days, and I believe that the current downturn has had a hand in accelerating some of the attrition in the case of UWB. "Survival of the fittest" applies to the semiconductor industry in spades, and this is just another example of it. Those of you with long-term memories will have "seen this movie before" as there is a long history of technologies materializing in a very similar manner. If you look at any relevant technology, say Bluetooth or Wi-Fi for example, you will find common stories of failed start-ups, stalled technology, interop issues, etc... Every technology goes through these growing pains. There tends to be a certain pattern recognition however, where the winner, although not first to market overall, was first to provide a solution that meets the requirements of the market. In the Bluetooth space, among the two or three dozen start-ups, CSR emerged as the leader. For Wi-Fi, where there were even more players, Atheros was the winner. Although UWB has gone through similar growing pains, the underlying value of the technology still exists today. Nothing has changed in that respect, except that the existing vendors now have solutions that deliver on that early promise. The claims made by certain editors about the imminent demise of UWB are not correct and not unique. In 2003 an article was published by EE Times that claimed "[Bluetooth Is Dead](#)". I know that bad news and controversy sells, but last I checked, Bluetooth shipments now tops 1 billion units per year. I would hardly call that dead.

In the case of Intel specifically, it's important to note that the UNO group (Ultrawideband Networking Operations) was a start-up of sorts that was funded by Intel's New Business Initiatives arm, not by a product group. When a business review was recently held, Intel decided that UWB (similar to Bluetooth) is not considered a piece of their core business, and would prefer to "buy" the technology if they needed it in the future. Few remember that Intel also started USB and Bluetooth

businesses in similar fashion. The USB business was eventually sold off to Cypress and the Bluetooth group closed down. This is quite typical of Intel for non-core businesses. They drive the technology during the incubation stages, but then allow outside vendors to take it over after it matures. So if Intel is the barometer for the success of complementary wireless technologies, I like UWB's chances. At the same time, they do continue to keep a close eye on these technologies through involvement in the industry consortiums such as the USB-IF, as well as through investments through their Intel Capital arm. In the UWB space, Intel has also invested in Staccato and Wisair, having participated in a round of funding just this November for Staccato.

The fact of the matter is, WiQuest and Intel were unable to execute on their next generation solutions to meet the requirements of the market, so their investors decided to pull the plug. And although initially viewed as a black eye for UWB, the silver lining with the shakeout is that there are now less competitors, which means there is more business to be had among the remaining vendors. In November, Staccato announced a merger with Artimi to take advantage of this opportunity. We believe that the combination of Staccato single-chip hardware with Artimi software enables us to offer best-in-class solutions for UWB and Wireless USB products.

### The Road Ahead

The future of UWB remains very promising. There simply is no better technology to transfer data wirelessly at high-speeds and low-power. And with the introduction of true market-enabling Gen2 solutions such as Staccato's Ripcord2 65nm single-chip family, we are likely to see compelling new usage models in a broad range of products, from PCs and peripherals to consumer electronics and mobile handsets. The WiMedia Alliance is also actively pursuing a roadmap that will extend the datarates beyond 480Mbps, allowing the technology to keep up with the trends and needs of the market for a long time to come.

Undoubtedly there is much being said about UWB these days, but once you are able to filter out the noise, the signal is clear that UWB is a very promising technology.

*"The reports of my death have been greatly exaggerated."* - Mark Twain



Jeff Chang, Vice President of Marketing, Staccato Communications.

# wi-fi / wlan news



## SiGe delivers small RF front-end for Wi-Fi apps

SiGe Semiconductor has announced what it claims is the world's smallest RF front-end solution for Wi-Fi applications. The device is based on an architecture that integrates two fully matched 2.4GHz power amplifiers for MIMO capability on a single die.

The SE2566U device also integrates harmonic filters, input and output matching circuitry, and power detectors for each transmit stream in a 3mm x 3mm package that, says SiGe, reduces external bill of materials by 80% when compared with two unmatched PA's for MIMO solutions, resulting in a bill of materials savings of approximately 25 cents.

"With the SE2566U, we have delivered a solution that is unmatched on the market when it comes to maximizing feature integration while meeting the increasing demands for small size, extended battery life and price competitiveness of this segment," said Jose Harrison, SiGe's director, product marketing, computing and consumer.

Harrison suggested that until now, manufacturers wanting to implement a dual-stream MIMO solution had to use two discrete, unmatched power amplifiers in 4mm x 4mm, 3mm x 3mm or 2mm x 2mm packages. These discrete MIMO solutions, said Harrison, consume approximately 250% more board area than the SE2566U. By minimizing interference, the SE2566U also ensures that systems can support MIMO capability for 802.11n implementations and features an integrated load-insensitive transmit power detector offering 20dB of dynamic range.

## WiFi Video + Photo Frame from eStarling

eStarling has released a Wi-Fi-enabled photo frame that comes with an email address so

that you can send content to it over the cellular networks as well as over a Wi-Fi link. Let's say you are at your daughter's birthday party and she's turning six. Using your cell phone, you can take a quick video of your daughter blowing out the candles. You can then immediately send that video to your mom's ImpactV frame, which might be sitting in her living room on the other side of the country or on the other side of the world. With no action on her part, and no wires or cables involved, the video magically appears on her ImpactV.

You can do the same thing with photos. Photos take a minute or so to arrive at the frame. Videos take a bit longer, sometimes as much as twenty minutes for larger video clips. The maximum length for a video clip is 4 minutes, so you can't send Batman Returns or anything crazy like that. Mind you, the frame does play DVD-quality video with high quality sound.

The ImpactV has an 8-Inch LCD screen (800 X 600 pixels), supports 802.11b/g (WEP64, WEP128, WPA1, WPA2), supports MMC/SD/MS card slot plus USB 2.0 client Interface, has 512MB of FLASH memory and weighs 3 lbs. It retails in the USA for \$199.99

## Atheros XSPAN adds .11n to ASUS netbooks

Atheros Communications told Incisor that mobile PC company Asus was adding Atheros' XSPAN 802.11n technology to new netbook products. The Eee PC S101 is the first Asus Netbook to feature XSPAN .11n. The Asus Eee PC S101 features Atheros' AR9281 single-chip, single-band 1x2 MIMO-enabled PCI Express (PCIe) design. The AR9281 provides up to 150 Mbps in transmit mode and up to 300 Mbps PHY rates in receive mode. Atheros claims that XSPAN helps extend Netbook battery life with its power-saving techniques such as Atheros Dynamic MIMO Power Save (DMPS) and Unscheduled Automatic Power Save

Delivery (UAPSD). In combination with the Asus S101's other system power-saving features, the Netbook delivers a claimed five hours of operation between charges. "With Atheros' single-chip XSPAN solution, our new S101 platform of Netbooks offers superior connectivity, faster downloads of data and multimedia applications, and enhanced power-efficiency over previous models," said SY Shian, General Manager of Asus' EPC Business Unit.

## Wipro-NewLogic licences Wi-Fi connectivity

Wipro-NewLogic and BridgeCo today announced that the Wipro-NewLogic WiLD 802.11 a/b/g Wireless LAN MAC and Baseband IP has been licensed by BridgeCo and integrated into the DM870 audio processor which is at heart of the JukeBlox network audio platform.

Wipro-NewLogic delivered its proven, Wi-Fi CERTIFIED, WiLD 802.11a/b/g WLAN MAC and Baseband IP including support for security (WPA, WPA2) and quality of service (WMM). The WiLD Baseband features an all-digital interface to the radio which Wipro-NewLogic says simplifies the SoC design and reduces the overall chip cost. For the matching radio, BridgeCo has selected a device based on Wipro-NewLogic's WiLD Eagle RF IP.

BridgeCo's JukeBlox Networked Audio technology is a complete solution for connecting audio systems to home networks, the Internet and portable audio devices. It combines the new triple-core DM870 Processor, Linux-based OS with proprietary Middleware, a software development kit (SDK) and a reference board design.



# The Wireless PAN seasonal menu

by Dean Anthony Gratton

**The ingredients used in this special seasonal menu have been carefully selected for their freshness and taste; we have selected our ingredients from the rawest of radio frequencies whilst ensuring that the organic essence infuses your radio range. A New Year seasonal treat – who can afford to miss this? Simply postpone your diet-focused New Year resolution and digest this healthy smorgasbord. You know you want it!**

Before we begin, you will need to gain the attention of your server (no – don't throw the bread at him, just simply catch his gaze and nod gracefully). When you have his undivided attention ask him for la Carte des Vins (yes, that's right alcohol – there is no other way to do this!). Control yourself! The choices are overwhelming (we know), but veer towards something light for now – perhaps the apéritif du maison might be a wonderful choice before starting your meal. And now, whilst slowly sipping your apéritif, sit back in your chair and ready yourself for a feast of tantalising flavours that will not only surprise you, but will leave you with that warm wireless feeling inside – ah, the true beauty of wireless technology!

The Wireless PAN Seasonal Menu offers you an insight of the year ahead – a look into 2009; a year expectantly fraught with financial turbulence and almost certain instability within the wireless and/or telecommunications industry. However, fret not, we simply have chosen to banish the unrelenting onslaught of the doom and gloom mantra and instead open a special menu where this month we hope to offer something for everyone.

## Sweet'n'low RF

We have to start somewhere and our first choice from the menu is a very light titbit that won't necessarily ruin the rest of your



meal – if you like, it's an amuse-gueule (amusement for the mouth) – a small delight that will prepare you for what is to come! The chef has carefully selected a wireless treat that will tantalise your taste buds – something that will certainly not impinge, but moreover will merely complement the menu and the courses to follow.

Near Field Communications (NFC) or RFID might be a good choice to start with – it's so light and very palatable. As we lead into the year, NFC is predicted to become more commonplace within mobile phones, as a trusted payment device. In fact, you may recall from last month's Incisor issue in Making Sense of Wireless Technology, we touched upon the audacious marketing from BarclayCard ([barclaycard.co.uk](http://barclaycard.co.uk)) where we witnessed a half-naked man

winging-it down a water-filled tube innocuously making a wireless payment (to a maximum of £10 per transaction), as if it had already reached such everyday prevalence.

The GSM Mobile Congress (February 2009), in Barcelona will be an event to certainly watch with avid interest, as inevitably more and more mobile manufacturers will begin to confidently integrate NFC into their products. A two-fold use case would serve the consumer somewhat aptly with, not only the ability to make payments, but to utilise the fantastical enabler potential of NFC to instigate and simplify the configuration and set-up of other wireless technologies and products – something, which has been promised for some time. Watch out for our mid-summer special on NFC – we should →

be able to provide you with the latest news about the technology as a payment solution and an intuitive enabler for other short-range wireless technologies.

### Entrée level

What we have cleverly done is lavish your taste buds with a host of unusual flavours that when combined undoubtedly leave you wanting more. On that note, let's move to the entrée where the chef has simply mastered the varied flavours of radio frequencies without a hint of interference. Each frequency can stand on its own whilst flirting with your taste buds – Gordon Ramsey would be so envious! Now think of low energy – the low energy wireless smorgasbord. We have Bluetooth low energy wireless, EnOcean, Z-Wave and let's not forget ZigBee, such an acquired taste – most of us resign ourselves to the marmite principle, you either love it or hate it!

Individually these technologies remain inimitable with their feature list in addition to the topology used. Each technology offers a comprehensive presence within both the home and commercial environments, bestowing a variety of pros and cons for the end-consumer like the chefs that have beautifully garnished your starter. Publicised as low energy, it's clearly a green vision that attempts to reduce our burdening energy bills, as well as providing an intrinsic convenience and a yearning to save the planet.

Bluetooth low energy wireless is the newcomer to the seasonal menu and 2009 should see the Bluetooth Special Interest Group (SIG) deliver on its promise. The CES Exhibition and Conference (January 2009) may offer us some insight as to what expect next year from the technology, as the best of Bluetooth is flaunted at the show. We have no doubt that EnOcean and Z-Wave will continue to plunder and pillage the European shores, as their successes will undoubtedly keep on growing despite the deepening recession (see Zensys: Veni, Vidi, Vici, in Incisor's August 2008 issue). But, we are somewhat curious about ZigBee, as there wasn't an awful lot to report last year with the exception of a rah-rah skirt (see One Year On: Does ZigBee have the X-Factor, in Incisor's September 2008 issue). It's a difficult one to predict, but will ZigBee actually make it through to 2010 – no jesting this time, honestly though, will it? We should expect more news in the second quarter of the year, so watch out for our low energy insight around March!

### Time for a sorbet ...

So, let's pause for a moment and take a little breather. In fact, why not grab your

server's attention and order some more alcohol (it's Christmas, okay?). Now, allow your eyes to devour the imminent plat principal (our main course) and inwardly ingest the chef's description, as his words magically capture the collection of expert ingredients – he will surely satisfy everyone's palette. The plat principal offers a rare treat from the wild carte (game menu) – a selection of rustic meats that are in season right now. Don't forget to take a look at the plat du jour (dish of the day), as you never know what you're missing!

Anyhow, both the plat principal and plat du jour offer a rustic seasonal menu choice – a collection of mature technologies that have been standing for some time and have captured the imagination of a large consumer-base. Bluetooth wireless is one of our regular dishes that consumers can't seemingly get enough of. It has appeared consistently within Incisor over the last year and in 2009, we expect it to surely line our front pages, again hopefully offering us a better insight into the low energy and high-speed future. We hope 2009 will be the year where Bluetooth begins to deliver real high-speed solutions, either utilising Wi-Fi as an intermediate evolution (see The Tortoise and the Hare, in Incisor's November 2008) or through Ultra-Wideband (UWB) or indeed both!

Moving away from the conventional themes, Incisor looks at the collection of Bluetooth profiles that have amassed over Bluetooth's ten-year life (or is that eleven?); we review the current state and future of a number of Bluetooth profiles later on in the year. Similarly, we examine Wi-Fi and that all elusive fully ratified 802.11n specification, which should be making an appearance early-summer 2009 (apparently). The industry will be watching in anticipation, as so many companies have already committed 802.11n (Draft!) silicon and software to a consumer-base. As such, Incisor picks the story up in the late winter when we can expect the certification and qualification to be in place and, of course, that all important rouse: will 802.11n deliver on its promise of greater data throughput?

### To be, or not to Wireless USB?

Another favourite on our seasonal menu is the offer of Wireless USB (WUSB), a technology that has been talked about for such a long time. Will 2009 see the launch of the technology into some modest fame and notoriety? Several companies already offer Wireless USB dongles and one in particular is Icron (icron.com). Ingeniously, Icron utilises 802.11g, 802.11n or UWB to ultimately

deliver wireless connectivity ensuring you're always wirelessly-enabled! We will be certainly taking more of an interest in Icron in 2009. Likewise, we will also be reviewing the WiMedia's prodigy - Ultra-Wideband - mid-summer along with a closer look at Wireless USB in the autumn. Clearly, some mobile phone manufacturers have become a little restless while waiting for UWB and have turned their attention to Wi-Fi, as an intermediate solution to deliver high-speed Bluetooth.

### Brandy and cigar time

You're stuffed! You couldn't possibly have desert, but there's always room for more alcohol (hiccup), right? Anyway, just pace yourself – let's allow twenty or so minutes to pass before looking at this year's desert choice; obviously, there's no rush. Actually, for desert, we have already selected a special one for you – a soufflé, a delicate dish that needs careful handling to avoid it going flat! All-in-all, it's akin to the potential success or failure for the whole wireless industry in 2009. It is evidently a difficult dish to prepare and ultimately one which our economic oven could easily ruin which may, in turn, put an end to our wireless soirée for 2009 ultimately sending our chefs into total disarray!

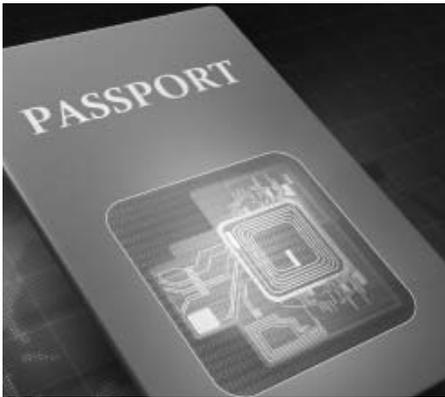
Let's put this aside and focus on a positive end to our feast; we can certainly look to past Incisor article predictions to lift both our spirits and our wireless soufflés for that matter, throughout the coming year ahead. As we ponder on the ingredients used in the various wireless offerings we have so eagerly consumed over the last year, we should perhaps give a thought to the market's ultimate wireless connoisseurs – our consumers. As we do so, we can only stop and admire the courage and perseverance of the chefs responsible for the dishes presented here in this feature and, let's face it, delicious article (c'est bon)! Perhaps, when all is said and done, it is you who are the Michelin reviewers. Have a wonderful Christmas and a spectacular New Year.

### About the Author

*Dr Dean Anthony Gratton is an author/writer and telecommunications consultant. He has authored several patents, contentious articles and a number of bestselling books on wireless technology. He has worked within the telecommunications industry for over fourteen years and provides consultancy to a number of high profile companies.*

*You can contact Dean at dean@dean Gratton.com and read more about his work at www.dean Gratton.com*

# low energy wireless news



## Global RFID market to reach \$5.3 Billion this year

The worldwide RFID market will exceed \$5.3 billion in 2008, according to a new forecast from ABI Research, which predicts that annual revenue growth will increase over the next five years, accelerating over the mid-term as high-growth, high-volume applications such as supply chain management, ID documents, ticketing and contactless payment drive shipments.

Excluding automobile immobilization, the market is expected to experience a 15% compound annual growth rate (CAGR) from 2008 through 2013. Forecasts peg the market at \$9.8 billion in 2013, or approximately \$8.2 billion without automobile immobilization.

According to research director Michael Liard, "To a casual observer the five-year CAGR for the RFID market as a whole may not seem impressive at face value. In this case, however, ABI Research notes that traditional applications with single-digit and low-double digit five-year compound annual growth rates continue to dominate current and near-term RFID market revenue share. In terms of overall market growth, if these 'traditional' applications – access control, automatic vehicle identification, automobile immobilization, and ID documents – are removed from the equation, the 2008-2013 CAGR for total RFID systems revenue exceeds 20%."

ABI Research believes it is still too early to tell what impact the state of the global economy will have on the RFID market. Investments are still being made in RFID companies, consolidation continues, and contracts are being awarded. Liard cautions, "We understand that the impact of economic events is often not immediate, however, and we expect to be in a better position to gauge how the economy is impacting RFID adoption and spending at the end of the year. In our opinion it often takes three to six months for any economic impact to be felt. Many of the vendors and users we have asked about a potential slowdown indicate no real change in RFID projects as yet."



## Alternative mobile payments challenge NFC

Most people consider that NFC (Near Field Communication) has been the leading contender among technologies that could enable mobile payments. But NFC has developed more slowly than anticipated, and will not offer viable large-scale mobile payment solutions for at least six years, according to a statement from ABI Research. In the mean time three existing technologies – SMS, mobile Internet and downloadable mobile applications – have the potential to deliver what NFC (so far) cannot.

"About half of all purchases made by consumers last year were made with cash," notes ABI Research senior analyst Mark Beccue.

"Consumers would in many cases prefer cashless transactions when away from home. So around the world solutions providers have leveraged SMS, mobile Internet and downloadable mobile applications to enable mobile commerce and payments. ABI Research calculates the potential revenue in 2013 from mobile transactions using these methods at about \$18 billion: a significant opportunity for payment processors."

ABI has released a study that examines the potential for mobile payments in four key vertical markets that will drive adoption: taxis, parking, movies, and Internet shopping. While the latter is usually done using credit cards anyway, the first three are areas in which mobile payments could replace cash transactions. The research found that Internet shopping would account for almost three quarters of this mobile commerce revenue in 2013. A further 15% would come from parking, with the balance split about evenly between taxi fares and movie tickets.

Beccue concluded, "Companies already seizing this mobile payment opportunity include parking solutions provider Verrus, Bharti Airtel and movie theatre operators in India, and notably eBay and Amazon – the world's largest e-commerce merchants – which have enthusiastically embraced mobile transactions with very comprehensive offerings."



## New chair and vice chair for NFC Forum

The Board of Directors of the NFC Forum has a new chairman and vice chairman. The association also announced the publication of its new white paper titled "Essentials for Successful NFC Mobile Ecosystems."

Heading up the organization is new Chairman Koichi Tagawa, General Manager of the Global Standards and Industry Relations Department of the FeliCa business at Sony Corporation. Tagawa has been involved in promoting the adoption and standardization of NFC technology since 2002. He actively contributed to the founding of the NFC Forum, and formerly served as founding vice chairman of the organization and replaces outgoing chairman Christophe Duverne of NXP Semiconductors.

The newly-elected vice chairman is Simon Pugh, group head, center of excellence for mobile for MasterCard Worldwide's advanced payments group. In this role, Pugh is responsible for developing and executing MasterCard's strategy for mobile commerce.

"Under the leadership of Mr. Duverne, the NFC Forum has grown from a promising idea into a vibrant, productive, global association comprising over 1600 individuals from 150 member organizations," said Koichi Tagawa. "In the past four years, Mr. Duverne has led the NFC Forum in releasing 11 development specifications that have established the foundation of interoperability necessary to create a successful and substantial NFC industry. We thank him for his leadership, his wisdom and his tireless effort."

The NFC Forum has also published a white paper titled "Essentials for Successful NFC Mobile Ecosystems." The paper describes a "big picture" of the NFC mobile world, explaining what is needed to realize successful NFC mobile services, including a technical framework, key technologies, typical use cases, and the structure of the overall ecosystem.

# events



DATE	EVENT	LOCATION	NOTES	LINK
Jan 8 - 11 2009	International Consumer Electronics Show	Las Vegas, Nevada, USA	-	<a href="http://www.cesweb.org">www.cesweb.org</a>
Feb 2 - 6 2009	Bluetooth UnPlug Fest 32	Fairmont Hotel, San Francisco, California, USA	-	<a href="https://www.bluetooth.org/upf/event.cfm#start">https://www.bluetooth.org/upf/event.cfm#start</a>
Feb 3 - 4 2009	DECT World & CAT-iq 2009	NH Barbizon Place, Amsterdam, Holland	The official event of the the DECT Forum	<a href="http://www.informatm.com">www.informatm.com</a>
Feb 16 - 19 2009	Mobile World Congress	Fira de Barcelona, Spain	-	<a href="http://www.mobileworldcongress.com">www.mobileworldcongress.com</a>
April 1 - 3 2009	CTIA Wireless 2009	Las Vegas Convention Centre, Las Vegas, Nevada, USA	-	<a href="http://www.ctiawireless.com">www.ctiawireless.com</a>
April 22 - 23 2009	Bluetooth SIG All Hands Meeting	Tokyo, Japan	-	<a href="http://www.bluetooth.org">www.bluetooth.org</a>
April 27 - 28 2009	2009 International IEEE Conference on RFID	Orlando, Florida, USA	-	<a href="http://www.ieee-rfid.org/2009/index.html">http://www.ieee-rfid.org/2009/index.html</a>
Oct 7 - 9 2009	CTIA Wireless I.T. & Entertainment 2009	San Diego Convention Centre, San Diego, California, USA	-	<a href="http://www.ctiawireless.com">www.ctiawireless.com</a>

Subscribe free of charge to Incisor, and access other products and services from Click I.T. Ltd at

[www.incisor.tv](http://www.incisor.tv)

# **INCISOR**<sup>TM</sup>

for the short  
range connectivity  
environment



**PRODUCED/DISTRIBUTED BY:**

**Click I.T. Ltd**  
Hampshire Gate  
Langley, Rake,  
Hampshire GU33 7JR, England  
Telephone: +44 (0)1730 895614

Incisor provides commercial and promotional opportunities in the short range wireless sector.

Contact: Mike Knivett  
Email: [mike@incisor.tv](mailto:mike@incisor.tv)  
Tel: +34 667 204629

Incisor is a trademark of Click I.T. Limited.

©Copyright Click I.T. Ltd. 1998 - 2008

**[www.incisor.tv](http://www.incisor.tv)**