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Video enabled  Issue 154

February 2011

IS 2011 THE DEFINING YEAR FOR MOBILE BROADBAND?

THIS ISSUE

ZIGBEE MOVES INTO CONSUMER ELECTRONICS

4G OR NOT 4G? BUSTING THE MYTH

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In last month's opening words I talked about the fact that everyone was jumping on the 'what will 2011 bring us?' bandwagon, and my closing words were "perhaps there will be clues at CES?"

Well, I went to CES and, if you've watched the three, Bluetooth SIG-sponsored daily video show reports (links on page 10 if you haven't), you may have picked up on one of the trends that, well, I could say was apparent, but it was a bit more than apparent. It was extremely obvious.

What was it? It was a rapidly advancing invasion force of technology, and its undeniable intent to infiltrate our cars.

As you may have noticed, our cars are getting more complicated all the time, and people are getting less and less confident that they can actually use all of the whizmos and gizmos that their chariots are being loaded up with.

Incisor intends to do something about this. See pages 11-12 to read all about it. But we can't do it without major support from the companies that represent the heart of the ICT industry. We need to pull together a bunch of visionaries that are ready to join forces in the way that the original Bluetooth Special Interest Group founders did.

That was a truly rare, but ultimately very, very successful collaboration. Can we make it happen again? Do you want to be part of it? Read the article, and if you are interested, get in touch with me – vholton@incisor.tv

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

INCISORTV FOCUS THIS MONTH:



This is the first of three Incisor.TV daily show reports filmed at CES 2011. To see all three shows, go to page 10.

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US telcos are now promoting 4G cellphones and services to their customers. But is it really 4G? Dean Gratton digs down to learn the truth

INCISOR AND TOP GEAR LIVE

Technology is invading the car. Incisor teams with Top Gear Live to ease the pain for consumers.

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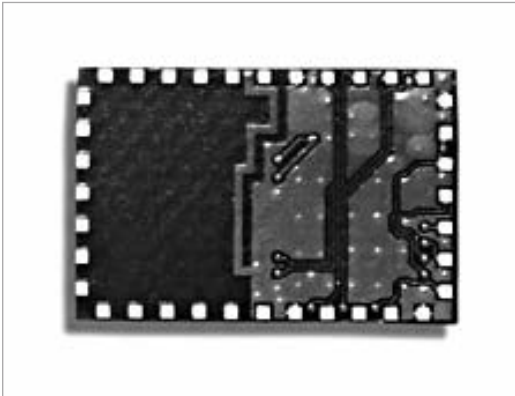
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Nordic Semiconductor launches μ Blue Bluetooth low energy solution

Ultra low power (ULP) RF specialist Nordic Semiconductor has launched the μ Blue nRF8001. By delivering sub 12.5mA peak currents and connected mode average currents as low as sub 12 μ A (for 1s connection intervals), Nordic claims that the μ Blue chip is the industry's lowest power Bluetooth low energy solution. The device is Nordic's first chip in its μ Blue Bluetooth low energy product line.

The nRF8001 is a highly integrated wireless connectivity solution supplied in a 5x5mm, 32-pin QFN package. In addition, the nRF8001 integrates a DC/DC regulator that, if enabled, can further cut peak currents and average currents by up to 20 percent when running from a coin cell battery source. Nordic also claims that the nRF8001 is the first fully qualified Bluetooth v4.0 low energy design to combine the Radio, Link Layer, and Host into one End Product Listing (EPL), the point of that being that designers can create new Bluetooth end products without any additional listing fees.

Thomas Embla Bonnerud, Product Manager for ULP Wireless at Nordic told Incisor, "Nordic now offers the complete range of best-in-class ULP wireless solutions and thus the ideal solution for any given application or segment – new or existing – proprietary or interoperable. The nRF8001 is the first product in our new μ Blue line, and delivers on the promise of Bluetooth low energy technology by offering a low cost, ULP wireless solution enabling years of battery lifetime from a single coin cell battery. And by combining a fully qualified Radio, Link Layer and Host stack into one EPL, while providing support for a wide range of application controllers and profiles, the nRF8001 is the easiest and fastest way for designers to add Bluetooth low energy connectivity to their applications."

Production samples and a development kit for the μ Blue nRF8001 are available now directly from Nordic Semiconductor. According to Bonnerud, general availability through sales distribution partners will start mid-February this year, with volume shipments beginning in March.

Bluetooth SIG extracts bad teeth

The Bluetooth Special Interest Group (SIG) has completed raids at three manufacturing facilities of Shenzhen Xi Lang Technology Company Limited, seizing thousands of counterfeit Bluetooth enabled products and semi-finished products that infringe on Bluetooth trademarks.

The raids legal enforcement action involved joint cooperation between the Bluetooth SIG, Shenzhen Public Security Bureau (PSB) – Ban Tian Police Station and the Market Supervision Administration of Shenzhen Municipality Bureau (Shenzhen MSA).

Earlier this year, the Bluetooth SIG asked I-OnAsia Limited to identify the source of suspected counterfeit goods. The first raid occurred 29 November 2010, following months of investigation. Police found more than 3,000 counterfeit Bluetooth enabled headsets and thousands of counterfeit semi-finished products (cases, chips, etc.) at Shenzhen Xi Lian Technology Company Limited. A legal representative of the company, Cao Zhi-wen, and five workers were arrested during the raid. The case will be handled by the Shenzhen MSA.

"This raid indicates our determination to protect Bluetooth trademarks, copyrights and intellectual property rights," said Mike Foley, executive director of the Bluetooth SIG. "The Bluetooth SIG makes every effort to safeguard its Bluetooth brand and protect our member's rights. We allow no room for any action that infringes upon the Bluetooth SIG's registered

trademarks and we will continue to vigorously defend Bluetooth SIG's intellectual property rights. These successful raids show that infringement on Bluetooth trademarks will be put to an end with continued cooperation between the Chinese government and Bluetooth SIG."

DLNA take-up growing?

The Digital Living Network Alliance (DLNA) made some announcements at the recent CES trade show. The message was that the organization has started certifying software products as DLNA-compliant. The DLNA has been busy certifying hardware for some time; more than 9000 consumer electronics products have received the stamp of approval. According to ABI Research data, more than 440 million DLNA-certified devices – from digital cameras to game consoles to TVs – had been installed in users' homes by the end of 2010.

According to ABI, the certification of software that enables the streaming of content between DLNA devices over the home network – including applications such as Media Server and Media Player – should be a very valuable addition to this program.

The DLNA specification is platform-agnostic, though Windows 7, by embedding it in the operating system, has created more opportunity for Microsoft users. However the inclusion of third-party vendors will open up the market and create wider choice for consumers.

Blackwell concluded, "Until now, manufacturers and developers tended to ignore the home network and focused on creating dedicated devices and their own ecosystems. At CES, it seemed that vendors in all of these spaces (software, hardware, and content) now realize the importance of home networks and are searching for ways to make them work."

news



Ford SYNC keeps driver's hands on the wheel

Ford rang in the new year with a noteworthy milestone, by installing the Ford SYNC in-car connectivity system on its 3 millionth vehicle in North America. SYNC uses voice control and Bluetooth, and was co-developed with Microsoft.

"Ford SYNC is clearly making a difference in our customer experience," said Ken Czubay, Ford vice president of U.S. Marketing, Sales and Service. "Not only is it proving to differentiate our products from the competition, SYNC is becoming a key point of satisfaction."

Ford SYNC was first available for the 2008 Ford Focus, with an option price of \$395, in the fall of 2007 and has been migrated across Ford's product lines. The option price remains at \$395 for most vehicles, but now includes several new standard features such as 911 Assist, Vehicle Health Report, and SYNC Services.

Ford says that customers are treating SYNC as a must-have technology, purchasing the system, when available, nearly 80 percent of the time on current 2011 models – up about 4 percentage points compared to 2010 models.

And a larger number of these customers are speaking out about how much they like the system, with recent internal research indicating that more than 80 percent of SYNC users are likely to recommend the system to others, representing a 5 percentage point increase over the previous year's data.

Voice control is seen to be highly valuable. "When we introduced SYNC, we were committed to making voice recognition a highly useful tool for the driver, and this research confirms we're on track," Jim Buczkowski, a Henry Ford Technical Fellow and director of Ford Electronics and Electrical

Systems Engineering, Research and Advanced Engineering told Incisor. "Ford remains committed to being the company that will continue to raise the bar on voice recognition as the primary user interface – giving customers the connectivity they want while helping them keep their eyes on the road and hands on the wheel."

With the introduction of MyFord Touch in 2010, Ford is aiming to make the SYNC voice recognition system even faster, friendlier and easier to use with more direct, first level commands, quicker and easier entry and search and more recognized aliases. The improvements were designed to help drivers accomplish tasks hands-free using more natural speech patterns and fewer commands, enabling them to focus on the task of driving.

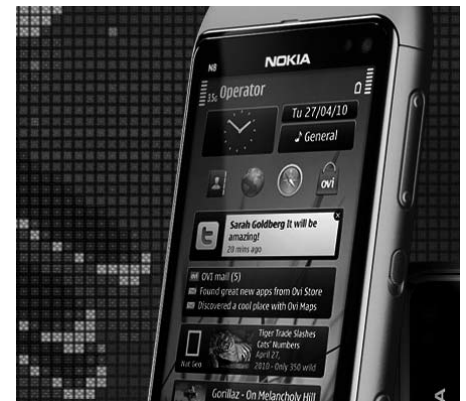
See Paul Aldighieri, who is responsible for Global Human Machine Interfaces at Ford, telling Incisor about SYNC and MyFord Touch at CES 2011. Click the screen below.



click the screen to watch movie.

New CE categories drive wireless connectivity IC markets

Surging sales of netbooks, media tablets, and other "always connected" consumer and industrial electronics products mean equally robust performance in markets for wireless connectivity ICs, says ABI Research. The market research company expects that when



the final numbers for 2010 are gathered, shipments of wireless connectivity chipsets will reach a total of approximately two billion units, a 22% shipment increase compared to 2009.

"Market demand for wireless connectivity chipsets has been increasingly robust in recent years, a trend that will continue in the medium term," says industry analyst Celia Bo. "Total shipments of wireless connectivity chipsets are forecast to reach seven billion units in 2015, with a 2010-2015 CAGR of 30%."

ABI calculates that Bluetooth maintained its lead among all wireless connectivity chipset categories, accounting for almost 60% of all 2010 shipments. Wi-Fi chipsets take second place with approximately a 38% market share. They are expected to achieve the highest growth rate among connectivity chipsets, with a 22% CAGR between 2010 and 2015.

For technology applications, the increasing demand for Wi-Fi-enabled mobile and consumer electronics devices is a key engine driving market growth. Wi-Fi-enabled mobile handset shipments have increased as much as 50% since 2009, and the adoption rate of Wi-Fi technology in mobile handsets is set to reach 32% in 2015. Today almost every netbook, media tablet, and gaming console has Wi-Fi embedded, and 2010 shipments of Wi-Fi-enabled consumer devices showed an increase of about 18% compared to 2009.

Besides the already established segments, other Wi-Fi-enabled consumer electronics devices such as digital still cameras (DSCs), digital camcorders, TVs, DVD players, DVRs and set-top boxes (STBs) are all set for strong growth in the coming years. Between 2010 and 2015, ABI predicts that CAGRs of Wi-Fi-enabled digital still cameras and TVs are expected to reach 63% and 65% respectively, followed by DVD players with a 47% CAGR.

new products – stuff we like

Parrot Asteroid = new generation of connected car receiver

Anybody that has read Incisor for any period of time will know that Parrot is a company that really does push the boundaries/blazes trails/boldly goes etc, etc. It's latest offspring -Asteroid - is a car receiver combining advanced hands-free telephony, connectivity to web services, access to applications and multi-source music listening.

Asteroid uses the Android operating system. Once connected to a GPS dongle (provided with the product) and a 3G key (not provided), it enables access to services such as Geo-localisation - Parrot Maps is a cartography service which locates the vehicle's location and identifies streets and businesses nearby. Using the zoom function allows for the user to dial, hands free, the indicated phone numbers of related addresses or to plan an itinerary. Other services, such as locating petrol stations and car parks will also be possible. There is also access to real time traffic updates and more

Parrot says that Asteroid will be regularly updated with new services allowing for easier journeys for drivers.

In addition to all of that clever stuff, it is a multi-source and hands-free music listening device. Multi-compatibility means that Asteroid enables the user to listen to music from various sources: USB key, iPhone / iPod, MP3 player, SD card and now, online radio stations (thanks to 3G). Music files can also be sent to the car receiver from a mobile phone and via Bluetooth stereo A2DP. Parrot Asteroid also offers the functionality of an old-school car receiver with an FM/AM tuner and RDS text+ service.

Voice control is another major feature, enabling applications such as hands free music search. A dedicated button on the Parrot Asteroid means you're able to speak the name of an artist or an album without using the text search or the wheel button to navigate in the menu. If the artist or album is not found in the peripheral(s) connected to the Asteroid and if a 3G key is connected to it, a search will



automatically begin on online musical libraries.

Asteroid makes the most of its Bluetooth connectivity. Paired with a mobile phone (2 telephones can be simultaneously connected), it synchronises and automatically updates its phonebook. Access to the phonebook can be achieved hands-free due to voice synthesis (Text-To-Speech) and training-free, multi user voice recognition. The driver only has to say the name of a contact, and dialing will start automatically with the conversation conducted on the audio system of the car. No pressing of buttons is required with incoming calls; the driver just has to say "accept" or "reject".

By the way, if you are skeptical about

voice control, check out the Incisor.TV video from CES, where Parrot CEO Henri Seydoux successfully launches an Internet search for Michael Jackson tracks, speaking to Asteroid in the middle of the CES hall. If a voice control system can cope with Henri's heavily French accented instruction in a super noisy environment like that, you should be OK pretty much anywhere else. The video also shows how the tech inside Asteroid has been ported over to other retail and OEM platforms.

Asteroid looks pretty cool too, finished in deep black with backlight buttons.

Which just leaves the 'when?' and 'how much?' questions. Well, we don't know the price yet, but Asteroid is due to be available during the 1st quarter of 2011.



click the screen to watch movie.

new products



Altec opts for aptX

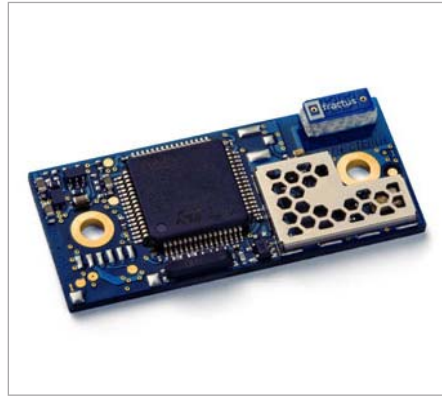
Altec Lansing, a brand with strong heritage in consumer audio, is using CSR's aptX audio CODEC technology to achieve hi-fi quality sound in its new Bluetooth wireless speaker, the inMotion Air.

Consumers will be able to stream music wirelessly from their iPhones, iPads, or a wide range of other Bluetooth A2DP compatible media devices in full hi-fi sound quality.

"We were determined to offer something truly revolutionary," observed Steve Schlangen, Product Manager for Altec Lansing. "We wanted to create a universal wireless speaker with the kind of superb sound quality it's generally assumed you could only achieve with a high-end speaker dock, but with all the advantages of a wireless speaker. No other readily available technology could offer us the degree of audio quality across Bluetooth that we achieve with CSR aptX. This combined with the superior engineering and build quality consumers have come to expect of Altec Lansing, has allowed us to deliver what we think is the industry's best Bluetooth speaker."

"CSR anticipates that dockless speakers will be one of the next hot products in the consumer audio space. CSR aptX is present in many consumer audio devices and accessories from global brands," commented Chris Havell, Director of Audio Marketing of CSR's Audio and Consumer Business Unit. "aptX also has strong and growing brand recognition with consumers, who now equate the aptX logo on the box with a high-quality product that's future-proofed to handle wireless audio streaming from the vast ecosystem of existing and emerging aptX compatible source devices."

The inMotion Air comes with a full-featured remote that controls the main functions of



iTunes, Windows Media Player and many other popular music players and claims up to seven hours of playing time across a range of up to 100 metres.

Bluetooth module with iPhone/Android and Analog I/O support

connectBlue has extended its Bluetooth product portfolio with the OBI411 Bluetooth I/O module. The Swedish company claims the module is ideal in industrial applications such as remote control, Apple iPhone operation and server communication via a mobile phone, and that in these applications, it now becomes easy to control and/or read units wirelessly via Bluetooth technology.

connectBlue told Incisor that the customer can either read/write digital I/O signals or read analog I/O signals wirelessly via Bluetooth technology.

"The new Bluetooth module makes data handling much easier for our industrial customers when they look to remote control any machine, read data presented in an iPhone/iPad, or read and transmit data to a server via a mobile phone," says Rolf Nilsson, CEO of connectBlue.

The new module supports Android based phones and Apple iPhone via an external Apple authentication chip. The I/O software can also be downloaded as firmware for the newly launched Bluetooth module OBS414 which has the Apple authentication chip built in.

The OBI411 module implements wireless I/O functionality with up to 16 digital I/O signals and 4 analog A/D converters on each side of the module with latency at only 5-8 ms. The Bluetooth module also supports the control / read of I/O signals



from an Apple iPhone / iPod touch / iPad, as well as multipoint/multidrop functionality.

Numeric keypad for Bluetooth Macs

Just in time for the tax season, apparently, Other World Computing (OWC) is pushing what it calls the Cropmark LMP Bluetooth Keypad for Apple wireless keyboard users. This adds the numeric capability missing from other Bluetooth-enabled Macintosh keyboards.

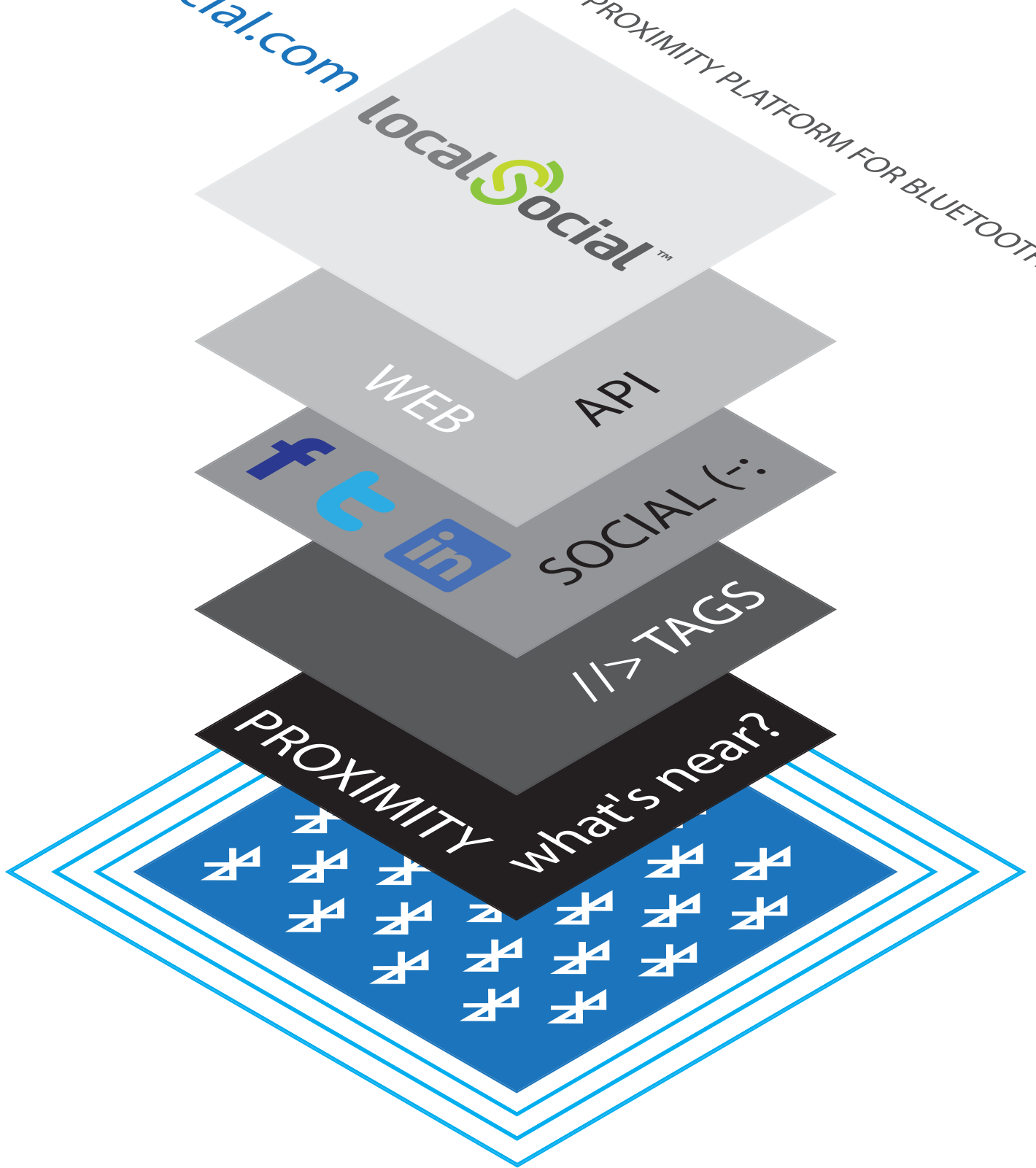
Designed with the same cylindrical base and brushed aluminium finish as the Apple keyboard, the Cropmark Keypad includes a custom linking connector that snaps in, integrating the keypad with the Apple Wireless Keyboard, and features a full set of number keys, including forward delete, page up, page down, five additional function buttons and scissor-type membrane keys. The keypad can also be used as a standalone device with the USB connected Apple keyboard; as well as with MacBook and MacBook Pro notebook Bluetooth enabled computers.

"The Mac community has been asking for a product like this ever since Apple's mainstream shift to non-extended wireless keyboards," said Larry O'Connor, Founder and CEO, Other World Computing. "While a wired extended keyboard is still standard with the Mac Pro, there are plenty of mini, iMac, and Mac notebook users that want this functionality – even Mac Pro owners who want this with an Apple wireless keyboard."

The Cropmark LMP Bluetooth Keypad retails for \$45.99

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Tim Fowler,
Cambridge
Consultants

Is 2011 the defining year for Mobile Broadband?

Tim Fowler, Commercial Director,
Wireless Division, Cambridge Consultants

Technology progresses as “points of revolutionary change followed by periods of evolutionary development”. When such revolutionary changes have occurred in the past, a major shift in the fortunes of the players has generally resulted. Companies that introduce these changes or who best address the new opportunities can achieve greater market share at the expense of those who don’t. What we are seeing today with the rapid growth of Mobile Broadband in the cellular industry is proving to be just such a point of revolutionary change.

Cambridge Consultants is developing technology for clients looking to exploit this undeniable trend in the cellular market. In this article, we look at some of the key obstacles that the industry must tackle to extract value from this revolution.

Gartner forecasts that the combined base of high-end ‘browser equipped’ and ‘smart’ phones will exceed the total number of PCs forecast in use by 2013, with approximately 1.8Bn such devices. Analysts also predict a forty-fold growth in mobile data traffic between 2009 to 2014 of which, more than half of 2014 traffic is predicted to be video. This rapid growth in network traffic is an example of revolutionary change in user behaviour occurring right now.

Of course, it is impossible to ignore the impact of the iPhone on all of this. While mobile broadband technology has been evolving, the iPhone triggered a change in the way users perceive the service. Now several similar platforms have emerged as evolutionary developments. These smart-phones, when running on broadband connections, make it simple to consume Internet services such as email, Instant Messaging, the Web, social



networks and hundreds and thousands of connected ‘apps’ Consumers have changed the way they communicate. Forever.

But what does this all mean for the Operators? While handsets are aspirational, exciting and novel, the services used are delivered “over the top”, i.e. they run between servers on the Internet and smart-phones, connected over the Operator’s network. The network is still important for getting service, but is almost hidden from users. It is similar to the delivery service used for Amazon goods. While Amazon can efficiently market and sell goods from their websites and store and ship goods from their warehouses, they rely on third-

party delivery services to get goods to customers. Without the delivery service, their offering doesn’t work. But, no one thinks of the mailman when buying a book from Amazon. Is this anonymity where the Mobile Operators are headed? That is certainly their fear.

Studies of experience of mobile broadband services show significant user dissatisfaction. Even when users factor in their lowered expectations, they are much less happy with mobile broadband compared to fixed. This comes as no surprise; it backs up individual experience. Many users state they would switch Operator for a better experience. So, the game for Operators must be firstly to deliver an excellent broadband





experience (at a sustainable price point) and secondly, to identify services of their own that make best use of their existing assets and traditional values. As mobile broadband experience is heavily affected by congestion today, improving performance to gain new customers (and hence more congestion) appears a dichotomy.

So can Mobile Operators create a broadband experience enjoyed favourably? The answer to that will depend upon the Operator. Technically there are many challenges. It is essential that Mobile Operators cooperate with and complement the fixed networks not compete with them. Smart-phones and PCs can access fixed networks already, so users will only select mobile services when needed, and the value they will place on that additional service will depend upon what utility they gain from the experience of any time connectivity, compared to waiting until they are in reach of an alternative network.

Competing head on with fixed broadband makes little sense where those services are already established. Mobile data rates are often quoted in comparison to fixed networks somewhat mischievously. Wired Ethernet can carry 100Mbit/s and LTE can carry 100Mbit/s, so they are the same, right? Not really. If I install a bundle of wired Ethernet connections, I can easily scale the bandwidth of a fixed network. But, it is very much harder to install a bundle of Ethers; there is only one and we all have to share it. Marketing "peak" data rates are just as misleading for mobile networks as they are for fixed, but users have already learned how to factor the exaggerated claims for fixed networks.

Several studies have investigated the amount of spectrum needed by mobile systems to deliver a broadband experience that could replace fixed broadband networks. They all identify that massively more spectrum below 3GHz would need to be allocated to the mobile operators. There are currently hundreds of existing uses and users for this spectrum and allocating the levels suggested is highly unlikely in a generation, so is there any alternative?

There are a number of solutions open to Operators:

- Moving to smaller cells, which means fewer users per cell and so less congestion;
 - Introducing indoor networks for higher capacity indoors and lower interference outdoors; users currently make most use of broadband networks when indoors;
 - Potentially making use of broadcast services with on-device caching to reduce the multicast nature of the bulk of the expected video traffic;
 - Making use of "offload" networks (WiFi etc.) will help to spread the load;
 - Over the medium to long term, changing the way spectrum is allocated to a cognitive approach – where spectrum is allocated dynamically, rather than monopolistically as at present. The White-spaces initiative is the first, and currently most interesting, step to utilising the spectrum in this way and it is starting today.
- In isolation, no one solution can deliver all an Operator needs but, when used together, future mobile broadband services will be able to handle all of the users doing all of the things they wish to; valuing the services of the Operators.
- Wireless broadband is here to stay. Its rapid evolutionary development over the next few years is essential to the future profitability of operators and hence the equipment suppliers who rely upon them. It is also essential for the long-term satisfaction of the users who have only really started to adopt these services.
- Cambridge Consultants is active across all these technical areas, helping our clients delight their customers and extract maximum value from this fast-moving industry. Making mobile broadband a success will mean utilising all of the technical tools available and not hoping that one can be selected to provide a silver bullet.

www.cambridgeconsultants.com

- Using more optimised mobile broadband technologies, such as LTE and HSPA+, offers Operators a better tool for delivery of the broadband experience;



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.

[Mobile Wireless Technology Blog](#)

Smartphones, netbooks and tablet PCs are making mobile connectivity an essential part of everyday life for many people. This blog examines the issues faced by technology professionals, network operators and industry analysts working to keep people connected on the move.

[Short Range Radar Blog](#)

Devoted to the topics surrounding short range radar systems in the 0 to 10km range. Examples of systems covered include in-wall, through wall, short range border surveillance and in-fill radar for both ATC and military applications.



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INCISOR.TV CES REPORT

Sponsored by  **Bluetooth**
SPECIAL INTEREST GROUP

Didn't make it to the 2011 Consumer Electronics Show? No problem. Get yourself a tasty beverage, find a comfy seat, sit back and enjoy the three daily show reports created for you by Incisor.TV

Oh, and – aside from short-range wireless matters - what were the main themes at CES? Well, it was tablets (more than 80 of them on display), 3D TV in all its flavours, and 4G services (or what US operators are calling 4G but which is often HSPA+), plus Android phones.

Click on the screens to view the three daily web TV shows.



DAY ONE SHOW REPORT

Interviews include:

Bluetooth Special Interest Group

Ford Motor Company – MyFord Touch driver connect system

Sennheiser – high quality Bluetooth audio headsets

ZoomSafer – smartphone app takes away the temptation to talk or text while driving

Schneider – the first true Bluetooth low energy product

iDevices – making men happy – mixing gadgets and barbecues

Mi-Sport – a fully submersible Bluetooth stereo headset



DAY TWO SHOW REPORT

Interviews include:

Henri Seydoux, CEO, Parrot – introducing Android to car infotainment systems

Bluetooth in medical and fitness applications:

- Jason Goldberg, Ideal Health

- Paul Russell, TRaC

- George Brooks, Lynux Works

Casio introduces Bluetooth low energy-based watch platform

David Yaish, Wisair, talks Wireless USB



DAY THREE SHOW REPORT – BLUETOOTH SIG BEST OF CES

Bluetooth SIG Best of CES categories and finalists included:

NOW:

Samsung Galaxy Tab (GT-P1000), Plantronics BackBeat 903+, LG HMB-810 Bluetooth enabled solar headset and speakerphone, 2011 Chevrolet Volt

NEW:

Vizio 65" Class Theatre 3D™ Edge Lit Razor LED™ LCD HDTV, Samsung Galaxy Player 50, iGrill, Zii Sound T6

NEXT:

ZOMM Wireless Leash, BodyMedia FIT Armband BW

Incisor gets revved up

Or... Using the car as a vehicle for consumer tech education

By Vince Holton

Where do I start?

Well, I start by banging a drum that has been banged many times before. What's my rhythm? Well, it's that consumer electronics device companies seem to have little or no understanding of the fact that their beloved customers haven't got a clue about how to use 95% of the capabilities of their products. This applies to phones, cars, microwaves, TVs, sex toys (sorry), games machines and let's not start on computers.

Nor, sadly, do they seem to care. All that is important is to continually pump out new products with new features that just contribute to making the tech fog more dense.

Do I have any credentials that allow me to pontificate on this subject? Well, yes, on two levels. First, I'm a guy and a consumer, and guys like technology and so we surround ourselves with it. Second I'm a journalist/producer/call me what you will, who has been covering the tech sector for a long time. Part of this work has involved me going out into the world and talking to consumers about how they use their technology. Incisor.TV made a series of movies about how people use Bluetooth, and what they think of the technology. If you missed these movies at the time, and want to view them now, just click the links here: [Biteback UK](#), [Biteback USA](#), [Biteback Sweden](#), [Biteback South Korea](#).

The overwhelming message from the Biteback programme was confirmation that a) people's usage of technology is much lower than the CE industry would like it to be and b) that they would use tech more if only they knew how to.

OMG! Consumers say SNAFU? NFW, IMHO. Dude.

Now, teaching people how to use technology is a nettle that nobody seems to want to grasp. It's a big job, and, like painting the Golden Gate Bridge, it's never ending. Each new technology, and each new combination of new technologies in each new gadget generates a new educational need.



So, technology development rumbles on, and understanding continues to be low. You have to believe that at some point people give up trying to keep up. Here's a case in point. I have been a car enthusiast all of my life. I prided myself in my knowledge, and while never claiming to know how to fix my car when it broke down, I could read a review in a car magazine and understand everything the journalist was talking about. And then the car industry started to increase the levels of technology in cars, and at the same time, the industry started to be afflicted by that tech industry obsession for TLAs (three letter abbreviations – keep up, those of you at the back).

I'm probably wrong, but ABS might have started it. That was OK. I could cope with anti-lock brakes being abbreviated to ABS. And for a few years I was able to keep up.

But no longer. Cars are no longer about an engine, four wheels and some tin to keep the rain off your head and the kids from falling out. Cars are becoming a mobile tech fest.

It's maybe an extreme example, but the

current Mercedes Benz S Class range includes ABS, naturally, but it also includes ESP (I'm OK with that, I think) and 7G-Tronic, AirMatic, AA, ABC, AHBA, NVAP, DAP, DP, BSA, PSB, COMAND (sp., surely?), SplitView, BlueTEC, BlueEfficiency, BlueZERO (none of these anything to do with Bluetooth, BTW), Bluetooth (thank God – something I understand), E-CELL, ALS, AHBA, APG, DAB, S-Guard, oh, and AMG (that, I approve).

Do you get the picture? It's no wonder I stopped trying to keep up years ago.

Getting your head round the head unit

The trouble is, the picture is getting worse, not better. That's because the unthinkable is happening. The unfathomable world of consumer electronics is now invading the car, so, in addition to that lot above, our poor consumer above will be dealing with GPS, Wi-Fi, Bluetooth (of course), 4G/LTE/WiMAX, NFC, RFID and so on.

To quote Dante's Inferno: Abandon all hope, ye who enter here!





What can a poor boy do? And especially, what can one poor boy, sitting in one small office in the English countryside do?

Well, he can refuse to give in to the inevitable, that's what. I've long believed that there's scope for improving consumer understanding of the technology that surrounds us all, and that if I can find the right, motivated people to work with, we can do something about it. And a really good place to start is with that piece of tech that is not only part of our everyday lives – like a cellphone but it's not a cellphone – but which also represents a vital part of the fabric of modern society – that damned complicated car I was talking about above.

So, there's this great idea about educating consumers about technology via their cars. That is a big challenge, whichever way you look at it. But then something serendipitous happens. A friend becomes involved in a business that encompasses three things – cars, consumers and mahooosive levels of global awareness.

Clarkson, Hamster, Captain Slow, New Stig And Incisor

Courtesy of a recent e-broadcast, everyone on the Incisor distribution list, and now a few more people beyond that, will know that I am talking about Top Gear. This British TV programme about cars is the BBC Television's biggest global export product by far – have a look at these stats:

- The BBC's Top Gear TV programme is viewed by more than 350 million people worldwide
- Top Gear is screened in more than 100 countries worldwide
- Top Gear Magazine is available in over 30 countries and has a monthly circulation of over 1.3million copies
- Top Gear Live Events have been attended by more than 1 million people to date
- The projected audience for the Top Gear Live events that Incisor will attend during 2011 is circa 475,000
- Audience profile – 25-35 year old males, relatively affluent, aspirational in outlook

- Top Gear Live promo campaign: media value £15M+ and 800,000 web visitors

You'll notice that there are two elements there – the Top Gear TV programme and Top Gear Live events, and they are as interlinked as conjoined twins. The latter element, the events programme, involves the Top Gear team getting out on the road and presenting the show in theatre format at high profile venues around the world. Yes, that's Clarkson, Hammond (Hamster), May and The Stig all larking about, just as they do in the studio, but performing directly in front of you, in real-life 3D, rather than via the (possibly 3D-mimicking) glowing box in the corner of your living room.

Alongside the live show there is a full-scale exhibition event. Historically, about 200 companies have been pitching their wares at the hordes of Top Gear fans, and typically these wares have included performance tyres, tuning kits, styling add-ons and various other accessory products. Conventional car show stuff, in other words.

This, then, is a perfect venue at which Incisor can stage an in-car technology event. And the timing is perfect. In-car tech was a big thing at the Consumer Electronics Show (CES) this year, and it was apparent that many car companies have grasped that the consumer market is ready for more in-car intelligence and connectivity. Picking one example, Incisor has previously documented the collaboration between Ford, Microsoft and the Bluetooth SIG over the SYNC project. Well, it's clear from Ford's wide-ranging presence at CES 2011, and the way that SYNC has grown and evolved into MyFord Touch, that in-car technology is a red hot topic at Ford at the moment. Ford booths, Ford branding and Ford cars were all over CES this year.

What's more, you may already be aware that this social media thing is catching on. Well, Bret Taylor, the Chief Technology Officer at Facebook said "Mobile usage has been the fastest-growing part of the Facebook experience" at a recent industry event. Sadly, for those already campaigning against people who text and

talk on their phones in cars, Facebook in the car is set to become a reality.

What's the plan, man?

So that is what we are going to do: From June, when the Top Gear Festival takes place at Top Gear's home at Dunsfold in the UK, there will be an Incisor auto technology pavilion at Top Gear Live events.

What technologies do we intend to cover? Well, Bluetooth and call-handling, of course, but also infotainment systems, in-car social media, mobile broadband, applications for Android/Windows 7 Mobile/iPhone, telematics, Wi-Fi, GPS and navigation – even stuff we get less excited about such as security, monitoring and road-tolling. The scope is huge.

What do we need to make this work? Well, partners, of course. I'm delicately calling them partners but we all know I mean sponsors. But finding the right partners shouldn't be too hard. This is a majorly attractive proposition for all concerned – access to huge numbers of wildly enthusiastic consumers, across continents, in a controlled (or do I mean captive?) environment, and piggy-backing one of the world's most successful automotive media brands.

Each company that works with us will have its own space in the pavilion, but will also participate in our own mini theatre presentation programme that will take place throughout each event.

Guilty as found

You can accuse me of using an Incisor feature to pitch one of our commercial projects. And there would be some justification for that accusation. But, and I really mean this, I absolutely believe in the concept that the technology industry should do more to enable its end customers to understand and get more use out of the complicated devices that they have sold them.

If we can achieve that, then this surely means that any given product will get more use, it will be more liked, and there will be a better level of understanding that makes the sales process for the next generation product that much easier, doesn't it?

We are now in talks with many potential partner companies. If anything I have said here has struck a chord with any like-minded visionaries out there (flattery never hurts), then get in touch with me and we can talk this through. Email me at vholt@incisor.tv

I, for one, can't wait to get involved with this project. Playing with Top Gear – isn't that what every boy wants?

INCISOR STAGES AUTO TECH EVENTS AT TOP GEAR LIVE 2011



Top Gear is a world famous British television series about cars. The show is currently presented by Jeremy Clarkson, Richard Hammond and James May, and features a mysterious test driver known only as The Stig. The programme has an estimated global audience of 350 million viewers.

Top Gear Live and Incisor

The global success of the Top Gear TV show has spawned the Top Gear Live events programme, which tours the world each year. So far, more than one million people have attended Top Gear Live events.



Click the image above to watch a video filmed at a Top Gear Live event.

Top Gear Live events include an interactive and static motor show, and this is where the connection with Incisor is made. Incisor will now produce and stage an exhibition and demonstration zone dedicated to in-car technology solutions and applications at Top Gear Live events during 2011 as part of the Top Gear Live motor show.

We will gather together leading providers of automotive technology solutions. These will include anyone that can contribute to the staging of a car-based gadget fest!

In addition to entertainment and call-handling systems, the scope of the displays can also include infomatics, telematics, M2M, GPS/location-based systems and even less palatable technology such as traffic management and wireless based road tolling systems!

Put your products in front of hundreds of thousands of consumers!

Incisor is looking for sponsor partners. If your company is involved in the design, development, manufacture, distribution or retail of in-car technology solutions, then you should be part of this Incisor event.

Contact: **Vince Holton**
Email: vholton@incisor.tv

www.incisor.tv

2011 Event Calendar

4-5 June

Dunsfold (the spiritual home of Top Gear), UK Festival

September

Moscow, Russia*

October

Amsterdam, The Netherlands*

November

London, UK*

November

Birmingham, UK*

*Event dates to be confirmed

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Wi-Fi

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call-handling

connectivity

wireless

Android

tolling



The Myth of 4G

by Dean Anthony Gratton

So, it's back to normality. Christmas and New Year celebrations are over and I have made it through January, the most depressing month of the year (apparently)! Now, I am suitably equipped with a glass of beer and some disco tunes (reminiscent of the New Year's celebratory bash) being thumped out courtesy of Windows Media Player in the background, as I contemplate this month's column. My agenda is filled with a review of the current state of 4G and the often ambiguous terminology that seemingly stretches our understanding of the associated technologies. The topic appeared on my agenda following a casual discussion with Vince, who was fortunate enough to be gallivanting at CES – he claims to have been working hard, although I have my suspicions, as several videos have emerged casting some doubt (you can check out the Incisor.tv website for Vince's daily updates).

Vince and I were discussing the latest wireless products and gossip following CES, when he casually intimated at how the 4G service in the States was amazing. "4G?" I exclaimed, slightly taken aback because, as far as I knew, 4G hasn't officially emerged. Vince continued the discussion, suggesting that US operators were delivering 4G services to their cellular subscribers and indeed, when I started digging a little deeper, I discovered that US operators were advertising 4G to their subscriber-base. It also seems that subscribers are oblivious to the actual terminology and wording surrounding 4G and, to be honest, why should they care? Subscribers are enjoying an enormous bandwidth and are receiving content on their mobile devices as quickly as when connected to their PC at home.

Where are we now with cellular technologies?

I guess I want to take a moment and explain the jargon surrounding cellular technologies – you know, the 2G, 3G, 3.5G, 3.75G, 3.99G, 4G labelling and so on. How do you

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*4G will be available in limited areas.

explain this to the everyday consumer? Perhaps you don't, although it's inevitable, as consumers have already been touted the 4G phenomenon. With this in mind, Apple, with their 2G and 3G iPhones were careful not to release an iPhone 4G and instead, labelled the product iPhone 4 – those in the know knew the reasons behind their choice of branding, whilst many ordinary consumers remained bewildered as they

were obviously expecting the 4G name. I guess, if you were one of the lucky ones who attended the Las Vegas hosted CES show, you may have a better understanding surrounding technology than most, albeit this is a tenuous assumption.

So, let's breakdown the technology. I'm going to skip 1G and 2G, and move straight to 3G as an opening gambit. It's where the



technology rests for the moment; well, to be more specific somewhere between 3G, 3.5G and 3.75G, which is all subject to your cellular provider! The 3rd Generation Partnership Project (3GPP) a group within the European Telecommunications Standards Institute (ETSI) has defined what is currently understood as third-generation (3G) mobile telecommunications. Currently, UMTS (for 3G capable services) and HSPA (3.5G and 3.75G services) are cellular standards governed by the group. Likewise, the same group also specifies Long Term Evolution (LTE), a standard that begins to bridge the gap between 3G and 4G (it's been characterised as 3.99G). In essence, US operators are marketing 3.99G technology to their subscribers and, somewhat arguably, many have simply rounded 3.99G to '4G'.

So, what's 4G then?

Admittedly, there's not much room for error in rounding-off, but it may lead to some confusion with a subscriber-base who are of the belief that they are receiving the next generation of cellular technology. For example, when 4G is actually delivered, deployed and being used, what's next? Will network operators begin to proclaim '5G' or perhaps, what's more likely, as jested by Vince in our conversation, '4G+' (groan). I might have snorted at the thought, but I have to agree, many a true word is spoken in jest!

So, what is 4G? 4G is a successor to the previous generations of 2G, 3G cellular technologies, as the increment would suggest, and whilst that may indeed be obvious, the US network operators are flouting a plethora of requirements that govern 4G, specifically. The International Telecommunication Union (ITU) prescribes the International Mobile Telecommunications Advanced (or IMT-Advanced) as criteria which operators need to fulfil in order to qualify their network as 4G capable. The criteria has been based on two proposals received from the 3GPP with their LTE-Advanced and the other from the IEEE based on 802.16m (a series of wireless broadband standards where 'm' addresses the advanced air interface covering requirements for 4G cellular systems).

Delivering wireless broadband

Nonetheless, it seems that there is a governing body taking charge of the next cellular evolution, but to my amazement the ITU have announced and permitted recently (December 2010) that technologies bridging the gap between 3G and 4G, namely UMTS/HSPA and LTE, could be considered 4G, despite not fulfilling the IMT-Advanced requirements – that's simply a license to confuse! It's akin to the Wi-Fi Alliance offering draft certification of the IEEE 802.11n standard – it's not quite finished; it's almost there, but you can call it 802.11n (Draft)! Brilliant!

I'm guessing it all comes down to the industry's eagerness to deliver (mobile) wireless broadband – another term, which is equally steeped in confusion. I have seen a wireless (Wi-Fi-enabled) router described as wireless broadband; in fact, any kind of Wi-Fi access point that's capable of delivering Internet connectivity – wrong! Wireless broadband is simply about delivering fixed broadband-like services and capabilities, when you're mobile or static, wirelessly! The requirements are definitive and the ITU website (itu.int) offers detailed information surrounding their expectations. With the Smartphone, NetBook and now Tablet generation amongst us, operators are obviously keen to offer us seamless connectivity experiences, just like we would normally receive at home. I suppose I should ask, who's driving who?

So, I just wanted to set the record straight – I wanted to let these network operators know that we know what they know. I also know they're not doing anything dubious; crikey, it seems the governing body has even given them permission! Anyhow, what I would really like to understand is how these operators (and the ITU for that matter) will approach the marketing blurb when 4G is really launched. If anyone has any advanced insight, I'd always welcome a discussion.

Until next month ...

I'm keen to get stuck into another "He Said, She Said" feature – did you catch the previous episode from September last year? Sarah and I looked at HTC HD2 versus Apple iPhone 4 and it's still a popular hit on the 'Net, so if you have any new short-range wireless goodies to show-off, then Sarah and I would be happy to hear from you - they could end up in Incisor and/or our own site. In the meantime, I have several stories buzzing around for next month's issue, but nothing has been finalised – I guess watch this space! I'm going to get back to more writing for my new book, as I'm already way behind. So, Dr G is signing off for this month.

About the Author

Dr Dean Anthony Gratton is a bestselling author and columnist. 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 sixteen years and provides consultancy to a number of high profile companies.

You can contact Dean at incisor@deangratton.com and follow him on Twitter @grattonboy, but you can read more about his work at www.deangratton.com.

Snippets

50%+ of US handset shipments will be smartphones by 2012

The demand for advanced mobile handsets that contain significant processing power, robust memory, large screens, and open operating systems has dominated the mobile phone market for the past several years. Smartphones will continue to dominate into the future. In-Stat forecasts that unit shipments of smartphones will be nearly 850 million by 2015, as they move toward the 1 billion shipment mark. Looking at the US market in particular, In-Stat suggests that more than half of US handset shipments will be smartphones by 2012.

CSR and Broadcom settle all litigation

CSR and Broadcom Corporation have agreed to settle all litigation and legal proceedings between the parties and their affiliates, including Broadcom's subsidiary Global Locate, Inc. and CSR's subsidiary SiRF Technology, Inc. Terms of the agreement are confidential.

The parties will seek to dismiss their various pending actions in U.S. District Court, and the U.S. International Trade Commission (ITC), based in Washington, D.C., and have agreed not to pursue further infringement actions against each other, or against third parties based on use of each others' products, for a period of five years.

New marketing director at Jabra

Headset and in-car speakerphone company Jabra has appointed Suzaan Sauerman as marketing director EMEA & APAC. Suzaan, who has over ten years' experience working in the telecommunications sector, joins Jabra from Motorola, where she worked in roles including Director of Channel Management EMEA and Channel Marketing Director EMEA. Prior to this, she held a number of other PR and marketing roles, including Channel Programme Manager Specialist at T-Mobile.



ZigBee moves into Consumer Electronics

Authors: Joe Lomako & Jon Harros, TRaC

ZigBee technology has gone from strength to strength over the past two years and is gaining considerable traction. This is no better demonstrated by the increased number of designers, companies and manufacturers realising the benefits of using a ZigBee network to enhance the function and efficiency of their design. The number of products submitted for certification is conspicuous; but what is also reassuring is the increased number of companies using ZigBee technology with proprietary applications. Clearly, the advantages of using ZigBee are increasingly appealing to designers of control, communications and network products and these advantages include ease of use, security and intelligent application potential.

Historically, previously released ZigBee products, have been dominated by Smart Energy (SE) and Home Automation (HA). No one can deny that the designs in the market place are making an impact on energy conservation, raising awareness of its importance, and making a significant contribution to improving the smart home experience. However, recently, other profiles from the ZigBee portfolio have now matured and we are seeing an increasing number of products in development, if not already released. This demonstrates that ZigBee really is now coming into its own, and include ZigBee Telecoms Services (ZTS), ZigBee Healthcare (ZHC) and RF4CE.

Of particular interest at the moment, is the RF4CE specification. This makes use of the underlying functions of ZigBee but with a slightly different architecture and purpose when compared to the main stream ZigBee standard. Its objective is to provide a low cost, easy-to-implement, bi-directional control solutions for a variety of consumer electronics devices.

Presently for RF4CE, the most recent profiles to emerge are ZigBee Remote Control (ZRC); ZigBee Input Devices (ZID), used to control computer



keyboards, mice, etc; and ZigBee 3D Sync, used to enhance the 3D viewing experience.

ZigBee Remote Control (ZRC) is the first of these profiles to be released by the ZigBee Alliance. For those not in the know, ZRC is a standard specification for the production of multi-vendor RF target and controller device communication. It consists of an RF4CE platform (chip), which uses the 802.15.4 radio, as in ZigBee. On top of this sits a unique profile which is essentially the function of the device. (For a more detailed explanation of the RF4CE technology and example applications see ZigBee RF4CE: Radio Frequency 4 Consumer Electronics in [issue 150 of Incisor](#)). The ZRC profile allows manufacturers of consumer electronics devices to design more advanced remote controls using RF as the transport.

The two biggest limitations with traditional remote controls are the need for direct line of sight between the remote and the IR receiver; and the one way communication that this traditional technology imposes on functionality. ZRC solves both of these issues by removing any line of sight restrictions and providing greater versatility of use and implementation.

So who is using the ZRC profile? The traditional implementers of the old (30 year old) IR technology are of course using it in products such as TV's, home theatre equipment, set-top boxes and other audio equipment.

With ZRC the communication is in both directions. As such a TV can tell a remote to start ringing (gone are the days of lost remotes down the back of the cushions,





etc). In addition, as you switch from controlling the volume on your TV to fast forwarding your Blue Ray, the remote can be told by the Blue Ray device to only activate the buttons that relate to Blue Ray functions (gone are the days of universal remotes with millions of buttons to cover functionality of all possible devices). And all of this occurs with your Consumer Electronics devices (TVs, DVD, Satellite receivers, HiFi, etc) hidden away or in separate rooms.

The ZRC profile specification was released in the summer of 2009 and there has been much activity in the industry, with engineers working hard to produce products which have now reached the certification stage. ZRC devices comprise of both controllers and target devices and the certification process can be quite different for each. Due to the simplicity of the ZRC profile the ZigBee Alliance has permitted the use of a self-certification route for target devices (only). One of the remits of this self-certification is that testing must be performed using a verified "ZRC Test Harness".

In response to this, TRaC has developed a test harness which has unique functionality specifically for this purpose. In accordance with ZigBee Alliance rules, this harness has been formally checked and validated by the Alliance itself.

The TRaC ZRC Test Harness makes use of the Freescale RF4CE Golden Platform

(Certified by the ZigBee Alliance). This marrying of the Freescale Technology with TRaC software engineering capability has provided a well designed product which can only serve to help in the advancement of ZigBee and ZigBee RF4CE product design.

"Freescale has applied considerable technological and engineering resource in producing a platform in which versatility is key and we are delighted that TRaC has recognised its potential by choosing this as the base for its test tool," commented Victor Berrios, Global Business Development Manager, Wireless Connectivity, Freescale

TRaC has been involved with the ZigBee Alliance for over 5 years and possesses considerable expertise in ZigBee technology, all of which contributed to the development of an exclusive support tool. Although the test harness is primarily for the self-certification of target devices, it has been designed with absolute versatility in mind. It is built on the Freescale IEEE 802.15.4 / ZigBee MC1321x Development kit. This is a highly versatile development board which supports a diverse set of applications. Its design is such that it can be set up in many different configurations to suit the user.

Here at TRaC our ZigBee experts, headed by Jon Harros, have been constantly following the development of all of the ZigBee standards closely whilst working

closely with the TRaC software team to ensure that ZigBee design engineers have a test product which covers all aspects of the standard.

Paul Russell, Managing Director of TRaC Telecoms & Radio, confirms TRaC's level of commitment: "We believe in the future of ZigBee and the ZigBee brand, and this is reflected in the vigour with which we promote ZigBee and the support we provide to the industry. We understand our customer's needs and a primary requirement is for a test tool which assists in expediting the design phase to the certification phase in the most efficient way minimising the time to market. This philosophy is one we take very seriously and is demonstrated by the way our test harness has been developed with the designer in mind."

It's clear that ZRC has a wide potential market. And the steps which have been taken by the ZigBee Alliance have provided a certification route that is both manufacturer-friendly whilst at the same time retaining the technological scrutiny that is required to ensure effective interoperability.

ZRC is only the first of the RF4CE profiles offered by the ZigBee Alliance, but with ZID and ZigBee 3D Sync, it looks like it's going to be an exciting time for future developments within the Consumer Electronics market.

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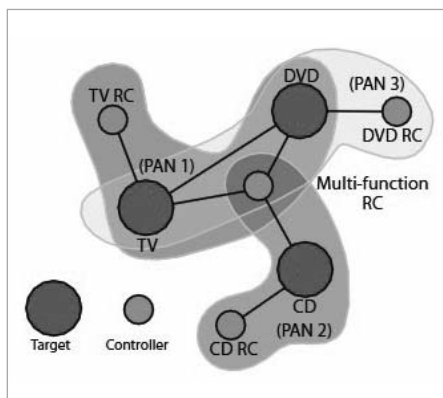
Joe Lomako, Business Development Manager, TRaC



Jon Harros, ZigBee Business Manager, TRaC



low energy wireless news



3D ZigBee – no, really....

We honestly never thought we would be writing these words, but, apparently, the ZigBee Alliance is developing a new standard to deliver the ultimate 3D viewing experience, ZigBee 3D Sync. The aim of the standard is 'to create more flexible and efficient 3D connections between 3D HDTVs and 3D glasses'.

The ZigBee Alliance told Incisor that ZigBee 3D Sync will replace 30 year-old infrared (IR) technology currently used in today's 3D products by providing a standard-based radio frequency (RF) solution, and will allow consumers greater freedom of movement while wearing 3D glasses without disrupting gaming or 3D HDTV viewing. It will also eliminate interference due to ambient light sources and provide two-way communications between 3D glasses and equipment, allowing them to switch automatically between 2D and 3D video feeds. It is claimed that 3D glasses built using ZigBee 3D will use energy more efficiently, giving consumers more hours of 3D entertainment per charge.

The standard will include support for: Multi-vendor 3D glasses interoperability, fully programmable display frame rates and shutter open/close times, and unlimited number of glasses, multiple user experience modes, for seamless switching between 3D and 2D, multi-player (full screen) 2D gaming, where each player receives a separate 2D image and multi-player 3D gaming, where each player receives a separate 3D image.

"When complete, ZigBee 3D Sync will help CE manufacturers deliver the best possible 3D experience for consumers," said Bob Heile, chairman of the ZigBee Alliance. "ZigBee 3D Sync is the latest CE-oriented standard we are developing to replace outdated IR technology that no longer delivers the great experience consumers want and expect."

ZigBee 3D Sync can be used simultaneously with the ZigBee Input Device and ZigBee

Remote Control standards introduced last year for CE. All three standards utilize the ZigBee RF4CE specification that was specifically designed to replace IR technology.

When complete, ZigBee 3D Sync will be the Alliance's ninth standard.

The wireless sector's least funky player, getting into bed with one of the CE industry's wackiest trends....

Who'da thought it?

GreenPeak launches new chips for RF4CE

GreenPeak Technologies, which is a fabless semiconductor company, has launched three new chips for ZigBee RF4CE remote control applications for TV's and set-top boxes.

The three devices all have full RF4CE functionality with ZRC embedded, targeting specific product applications. The GP520 is a front-panel controller for set-top boxes with SPI/TWI interfaces. The GP530 is for TVs with UART interfaces and the GP540 is a complete "remote control on a chip" including embedded keyboard scanner and full IR functionality.

"Bringing the complete RF4CE functionality for each application into a single device makes low cost and reliable RF remote controls a reality," said Cees Links, CEO of GreenPeak Technologies. "This new series of RF4CE chips brings the cost of the total solution down and makes the choice for RF remote controls even easier. GreenPeak provides a streamlined one-stop-shop offering for RF4CE chips. The integration of advanced RF4CE configurability provides simplicity of integration bringing the development and integration time down to virtually zero."

GreenPeak's says it is enabling thin remote control designs that don't require a battery lid

and that implements find-me and push functionality.

GreenPeak is also claiming to take Wi-Fi coexistence one step further, suggesting that its RF4CE chips offer an additional 30dB (1000x) better interference robustness against Wi-Fi, Bluetooth and other RF signals. This uses two separate antennas to avoid the typical in-door wave cancellation, and will be essential when more TVs and set-top boxes will be equipped with Wi-Fi internet connections.

ZigBee network processor with embedded ZigBee PRO stack from TI

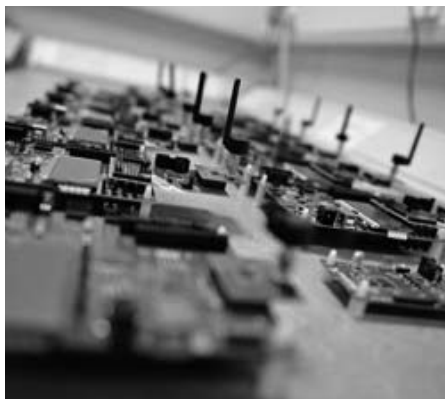
Texas Instruments (TI) has introduced a 2.4-GHz ZigBee network processor with integrated ZigBee PRO software stack. The new CC2530ZNP is an off-the-shelf ZigBee solution that means that designers don't have to learn the complexities of a full ZigBee stack. The CC2530ZNP also allows the use of the existing host processor to run application code while the CC2530ZNP supports the networking component of the system. Target applications include home and building automation, industrial monitoring and control, sensor networks and telehealth.

TI claims that the CC2530's ZigBee network processor reduces development time by 25 percent and that the embedded ZigBee PRO stack delivers standardized, robust mesh network and reduces firmware development by 50 percent.

TI has provided support for its Z-Stack software and SimpleAPI, which has only 10 calls to learn, and communicates to the host processor via an SPI or UART command interface.

The CC2530ZNP is available now.

low energy wireless news



ZigBee Remote Controls now covered by TRaC's ZigBee test service

Test, certification and compliance specialist, TRaC, has expanded its capabilities in ZigBee Testing to include testing for ZigBee Remote Control (ZRC) devices. The new service covers both the remote control devices and their target counterparts, such as HD TV, Blu-ray, Set Top Boxes and other products using similar technology.

The ZigBee Remote Control standard has been developed by the ZigBee Alliance, and defines an advanced RF remote control system which is built on an RF4CE platform. The 2-way connection, which this new technology allows, provides more functionality over traditional IR remote controls and removes the issues associated with line of sight control.

TRaC already offers a complete Platform Test Service to RF4CE, however, the test specification for ZigBee Remote Controls has recently been published allowing manufacturers of ZRC devices to seek profile certification and apply the ZigBee and ZRC logos.

TRaC carries out the ZigBee Remote Control Profile Testing for both controllers and target devices is performed at its ZigBee Alliance recognised test facility based in Hull, UK.

TRaC is also preparing for further RF4CE profiles when the test specifications become available.

See also ["ZigBee moves into Consumer Electronics"](#) in this issue

Low-power wireless technologies set for over 30% CAGR

IMS Research is forecasting that the landscape for low-power wireless technologies will alter dramatically over the coming years, driven by a combination of emerging application areas and new low-power RF solutions. In 2009, proprietary solutions accounted for over 85% of the low-power RF market; predominantly for application areas such as automotive devices and wireless PC peripherals. Proprietary low-power wireless IC shipments are forecast to increase at a CAGR of over 20% for the period 2009-2015; yet by 2015, they are projected to account for less than half of low-power RF IC shipments, as momentum grows behind key standardised solutions.

Lisa Arrowsmith, Senior Market Analyst at IMS Research, told Incisor, "There is no single 'killer-app' that is the same across all low-power wireless solutions. Different technologies are being driven by a wide range of existing and emerging applications, which vary in importance across the forecast period. For example, in 2009, smart metering gateways represented over half of the market for ZigBee ICs; however, by 2015, smart meter gateways are forecast to decline in their proportion of all ZigBee-enabled devices, as ZigBee-enabled HAN and home health monitoring devices start to be shipped in higher volumes".

NFC in public transport

The NFC Forum has published a White Paper entitled "NFC in Public Transport," which is available for download free of charge from the NFC Forum web site

The paper applies a broad definition of transport, ranging from trains, buses, and subways to taxis, ferries, automobiles, and bicycle rentals, and it includes a variety of descriptive use cases and best practice examples of implementations in Germany, the United Kingdom, and the United States.

The paper describes several ways to introduce NFC into a transport system, from simple point-to-point "pay-as-you-go" schemes to more complex implementations that include multiple operators and multiple payment options, for all forms of ticketing systems.

One section of the paper shows how transport operators can realize both financial and operational benefits from adopting NFC. The Forum suggests that there are cost savings from eliminating equipment, ending use of paper and plastic cards, and reducing cash handling, while increased efficiencies can lead to higher customer satisfaction, which in turn can mean increased travel and retention. New revenue streams from advertising and promotional opportunities can benefit an operator's bottom line as well.

The Original 'IPAD'?

It had a touch-screen display, was powered by an ARM processor, featured a built-in MP3 player and it let you surf the Internet on your couch. Sound familiar? Think again. This was the Intel PAD or, as it was known internally at the time, the IPAD. It was officially branded the Intel Web Tablet, but it never made it to market.

Amid the tablet frenzy at the recent International Consumer Electronics Show where some 80 new tablets were announced (how many of these may not make it to market is anyone's guess), we took a stroll down memory lane with some of the Intel employees who developed Intel's tablet over a decade ago. The Intel Web Tablet let users connect to their PC and surf the Web from anywhere in the home using Intel's Anypoint wireless home networking solution. It was not a stand-alone PC but an extended browsing device with some additional applications.



The Intel Web Tablet utilized a touch screen design or a stylus for navigation.

The Intel device ran on an Intel StrongARM 1110 processor, a derivative of the family of ARM microprocessors originally developed by the Digital Equipment Corporation and acquired by Intel under the terms of a 1998 legal settlement. Intel replaced the StrongARM design with a new family of ARM chips aimed primarily at the cellular market under the XScale brand, but then sold off the business to Marvell in 2006 as part of an effort to focus on the core PC and server businesses.

Anywhere in the Home

The idea for a tablet grew out of an initiative in the Intel Labs in the late 1990s called "Anywhere in the Home," based in part of some ethnographic research the company was just starting as a way of guiding product development.

"We were looking for ways to associate Intel with the Internet and we saw this as an ideal way to make that happen," said David Cobbley, who headed up engineering on the device and was one of the original three employees who established a start-up inside Intel – the others being David Andersen and Ed Arrington. They became known affectionately as the "Three Amigos."

"I can remember sitting in the Labs looking at the ethnographic research and kind of yawning, until I saw this pad concept," said Arrington, who led the marketing effort for the tablet. "I remember seeing the concept of how it could be used in the home, moving it around, using it for content consumption. That was a wake-up call for me. I said 'Hey that may be an opportunity.'"

The Intel Web Tablet let users connect to their PC and featured innovative designs that were ahead of its time. Cobbley, Andersen and Arrington went off and developed a business plan and were funded by a nascent group inside Intel designed to help fund and grow new ideas like this one. The year was 1998. At first, the team worked quietly around an OEM model, in which Intel would develop a reference design for a customer who could bring it to market. But then something happened that raised the stakes and changed everything.

"One of the local TV stations in Portland showed some video from one of our early trials in a local area home," recalled Andersen, the original general manager and later chief technology officer for the tablet group. "Somehow, that got picked up by an affiliate station in California, where Andy Grove saw it."

Grove, then Intel's chairman, wouldn't necessarily have known about every new business initiative. It was the first he had heard about it, and the next thing they knew, Grove was in Oregon

getting a complete download on the project.

"We told Andy our next step was to show it at the Intel Developer Forum," Andersen said. "Andy said no. He said we're going to make this an Intel-branded product. We didn't want to do that, we wanted to go low under the radar and make this an OEM product."

So the course changed as Grove weighed in. Now, the tablet would be an Intel-branded product. At the time, Intel was also designing and building a host of other branded products, including digital cameras, wireless keyboards and mice, and a line of connected toys with Mattel. Grove saw this as a natural extension of the business that would help sell more PCs.

All of a sudden, the tablet group had a new general manager and considerably more funding. And along with it, a higher profile and higher expectations.

Content Consumption Model

Cobbley said they knew at the time that the cost of LCD displays and Li-Ion batteries would make it an expensive product, so they developed a "walled garden" approach. They struck deals with the likes of Disney and ESPN to help subsidize the device by offering individual landing pages. The tablet had only a few large buttons, each of which would take users to a starting page sponsored by the content companies.

"We didn't have the concept of apps, but that was as close as we could get. We had a dedicated browser, and that first turn-on led to a dedicated home page and we made it a content play," Cobbley said.



The tablet incorporated five large buttons at the top, each of which could be customized for individual family members to have their own starting pages.



The similarities to today's iPad and other tablets went beyond content consumption as a key usage model. You could also use touch or a stylus to navigate. It had a soft translucent keyboard design that Intel patented. It played music and videos, and served as a digital picture frame before digital picture frames went mainstream.

"It was ahead of its time," Cobbley said. "We had a lot of debates about the user experience and put a lot of emphasis there."

The software package included Wind River's WindStorm (from the company Intel would acquire several years later), the VxWorks real-time operating system, an embedded browser and software for rich audio. It also used Intel's low-power Strataflash memory for code and data storage.

When it was time to preview the device in January 2001, then-Intel CEO Craig Barrett took centre stage at CES and described a vision of an "extended PC era," where devices like the Intel Tablet would allow consumers to take their Internet experience beyond the PC.

"As digital consumer devices evolve, they will migrate toward more of the PC's capabilities and blend into the PC environment," Barrett said. "Consumers will be at the centre of their own Internet experiences."

At the time, market research company IDC predicted that Web tablets would account for only about 1 million of the 89 million so-called Internet appliances that were expected to ship in 2004.

"We were the big stars of CES in 2001," Andersen recalled. "We were outselling with mock-ups even before we had the device and the response was good. It was all about the Internet and the tech boom was crazy. It was a good time to be selling."

Shut down

By September 2001 everything would change, again. It turned out that Intel's foray into branded devices was causing tension with Intel customers, according to Andersen. It may or may not have been the tablet itself, but there had been a lot of publicity about Intel's consumer products push that year, and OEMs were apparently not pleased.

There were other issues. The software had been late, which meant they were late to



The Intel Web Tablet had a docking station for charging and is seen here with the original box. The product never made it to market.

launch, and the cost was going to be over \$500 once they reached the market. Cobbley said they knew the initial version would be more of a concept and they were already working on a more robust second-generation product.

Perhaps it was an idea whose time had not yet come. Or perhaps it was Intel's well known impatience for any business that couldn't project sales of a billion dollars or more in a short time. But they were boxed and ready in the fall of 2001 when the axe came down.

"We were at the beach celebrating, the trucks were rolling," Andersen said, when the call came to shut it all down. Circuit City was signed up to sell them, there was even an ad that ran in the New York Times, but not a single one of the tablets ever made it to stores."

So how did they feel years later when the iPad was launched and tablets became the hot new thing?

"What made it so interesting to me was to realize how cutting edge we were from a usability perspective," Arrington said. "It was gratifying to say we were right."

Cobbley said what's disappointing is that Intel had just started to figure out not only the design and the usage model, but the ecosystem for an entirely new business. He said the decision to shut down the tablet group and the entire consumer products division led to lost opportunity. He wonders what could have been -- if Intel had stuck it out.

"We actually had started to figure it out, the retailers, channels, relationships, OEMs," Cobbley said. "We also lost a major cadre of very talented software people who were associated with these projects. Some say Intel's seventh value is impatience. We should have come back or kept some of it going."

Snippets

RivieraWaves licenses Bluetooth low energy IP to Renesas Electronics

RivieraWaves has licensed Bluetooth low energy IP to Renesas Electronics, a provider of semiconductor solutions, for its new Bluetooth low energy integrated products.

The RivieraWaves Bluetooth low energy IP accommodates the requirements of low power products, running on a coin cell battery or energy harvesting system, such as in sport & fitness wireless sensors, medical wireless sensors, watches, remote controllers, home or building control & automation systems, etc...

To get fit, get tech

A new study by the Consumer Electronics Association reveals that fitness technologies are key to helping consumers stay motivated and keep their resolutions to get fit in the New Year. The CEA's newly released research study: Getting Fit With Consumer Electronics shows almost half of U.S. online consumers used a fitness technology in the past year, and 37 percent anticipate purchasing a fitness technology in the next 12 months.

According to the study, 54 percent of consumers cite lack of motivation as the main reason not to exercise. Fitness technologies can help these consumers assess their fitness level; set realistic, achievable goals; track the amount of physical activity they get each day; monitor their calorie intake; track progress on fitness goals; and ultimately help make the journey more fun and engaging.

high speed wireless news



So, what's this Exceptionally Demanding Wireless Vehicle Control?

connectBlue must know, as it has signed a strategic initial contract with Kollmorgen, a provider of vehicle control solutions, and is going to have to supply some. The delivery encompasses ready-to-embed Wireless LAN modules to be used in driverless lift truck automation where there is a need for a compact, robust and reliable vehicle control solution.

Apparently, driverless lift truck automation requires a high performing, non-stop solution in an environment where small size is of key importance as well as having a reliable operation during temperature variations, vibrations, humidity and dust. Besides these extreme conditions, high demands are placed on the technical implementation from all the connections that have to be established with roaming between multiple access points during every route.

"Regardless of external conditions, the technical implementation has to be fault proof 24-7," said Markus Johansson, Product Manager, Kollmorgen. "As we developed our CVC600 vehicle controller, we thoroughly scanned the market for a wireless partner and chose connectBlue and its proven, compact Wireless LAN 802.11 a/b/g/n module."

"We were already used to tough demands from various industrial automation applications," says Rolf Nilsson, CEO, connectBlue. "But driverless lift truck automation needs extra attention to exceptional environmental conditions, reliable and on-going operation, low latency as well as rapid roaming – all at the same time. These demands present an interesting combination that certainly will



open up opportunities for other applications with unusual high demands on wireless communication."

Over 11 billion Wi-Fi hotspot sessions by 2014

While venue growth in Wi-Fi hotspots has been and continues to be strong, usage growth has been phenomenal. AT&T reported a fivefold increase from 1Q09 to 1Q10. Other operators have experienced similarly strong growth in usage. Market research company In-Stat projects worldwide annual hotspot connects to grow to over 11 billion by 2014.

"Venue growth will begin to wane over the next several years as operator networks reach a critical mass and desirable locations become saturated. Growth in usage is expected to remain strong over the forecast period," says Amy Cravens, a market analyst at In-Stat. "In the past, usage growth has largely been tied to venue growth, i.e., the more venues the more usage, and the rate of usage per venue was fairly constant. Going forward, however, usage growth will be driven by increases in connects per day at each venue. This is a result, at least in part, to a broadening base of Wi-Fi-enabled devices."

In-Stat also predicts that worldwide annual hotspot connects, or sessions, will reach over 2 billion by the end of 2010 with annual hotspot connects anticipated to grow to over 11 billion by 2014, and that Asia/Pacific will have about one quarter of the worldwide hotspot venues over the forecast period. Currently, Europe and North America are the largest hotspot markets based on usage (annual connects).

INCISOR TV Video presentations

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IncisorTV at CES 2011 – Bluetooth Best of CES

IncisorTV at CES 2011 – Day 2

IncisorTV at CES 2011 – Day 1

Rococo discusses LocalSocial

Bluetooth High Speed Technology

Frontline – Interoperability testing

Bluetooth SIG BETS programme

Frontline – BPA500 protocol analyser

Aftermarket Bluetooth versus Factory fit

Who needs stress? Says Jabra

EnOcean Alliance – energy harvesting technology

Aftermarket Bluetooth versus factory fit

Bluetooth 2010 All Hands Meeting

Anoto - 10 years of digital pen and paper

BiteBack Sweden

CES 2010 Daily Show report – Day 1

CES 2010 Daily Show report – Day 1

CES 2010 Daily Show report – Day 1

BiteBack Asia

BiteBack USA

BitBack UK

IncisorTV commercial for CSR/SiRF merger

DECT Forum and CAT-iq in 2009

Bluetooth SIG – Best of CES 2009

WiMedia Alliance – UWB in 2009

Incisor showreel

WiMedia special - UWB - a high performance solution / part 1

WiMedia special - UWB - a high performance solution / part 2

WiMedia special - WiMedia and Bluetooth

WiMedia special - Updating the WiMedia roadmap

WiMedia - The future for UWB

Bluetooth low energy wireless technology

IncisorTV commercial for CSR – BlueCore7

IncisorTV commercial for CSR RoadTunes

IncisorTV commercial for CSR BlueCore Player

A guide to Bluetooth Version 2.1 + EDR

10 years of Bluetooth / Best Bluetooth of CES 2008

CES 2008 – Profile of Parrot

Introducing Incisor

2007 Wireless Symposium

4G / LTE / WiMAX news

Femtozone apps key to femtocell success

Femtocells are now attracting consumers' attention, according to ABI Research. The initial use-case has been to enhance indoor cellular coverage, but ABI believes it is now clear that their potential utility is much wider. It is based on "femtozone services" that use key attributes such as location and presence to trigger innovative applications residing on the mobile device, or in the access point, the core gateway, or the cloud.

A simple example: a family alert system. A young person arrives at the family home, and the femtocell there registers the presence of his or her mobile phone and sends out an SMS notification to the parents. Such systems are already in use in Japan. Other kinds of femtozone applications can turn on lights or activate security systems, while still others can be used to sync content between mobile phones and other devices in the home such as TVs, laptops and media players. Via the mobile network, they can even allow remote access to digital content stored at home.

ABI Research forecasts about 2.3 million femtozone subscribers in 2012, providing revenue of more than \$100 million. These numbers rise sharply to 2015, when 45% of femtocell users will subscribe to femtozone services. Femtozone services will see initial adoption in the Asia-Pacific

region, but ultimately the North American market will be by far the largest.

Practice director Aditya Kaul says, "Femtozone services will be bundled with femtocell subscriptions and will also be available individually, increasing the perceived value of having a femtocell in the home. Eventually, mobile apps available from Apple or Google App stores may be designed to work via a femtocell. The femtozone services market is expected to reach almost \$2 billion in revenue by 2015, but operators need to act fast, as the popularity of Wi-Fi/GPS-based over the top applications could pose a hindrance."

3G basestation on a USB dongle

Picochip used CES as the launch platform for its vision for next-generation femtocells, including picoXcell technology that will allow its customers to create an entire 3G cellular basestation in a USB dongle.

Other tech on show included enabling technology for small form factor public access HSPA+ femtocells (sometimes known as picocells or microcells); picoArray technology that is already delivering 4G services around the world and enabling LTE trials today; and the company's new platform for dual mode (LTE and HSPA+) small cells.

Picochip told Incisor that availability of ultra-small femtocells will allow operators to add HSPA+ home-basestation capabilities to appliances such as residential gateways, cable modems and set-top boxes, simply by plugging in a USB key. A "private cellsite" solution like this will solve consumer problems of 'not-spots' or coverage holes, deliver far faster data services than on a conventional cell, improve battery life and enable a variety of innovative "home zone" services.

For public access products, Picochip's new dual-mode LTE / HSPA+ solution is claimed to be the only optimized platform for designers of 'small cell' basestations that provide both LTE and HSPA+ cellular services. It enables operators to deploy LTE in an evolutionary manner, while simultaneously maximizing return on investment in existing 3G networks.

"It may sound incredible, but within a matter of months we'll be able to fit a complete 3G basestation on a USB dongle," said Picochip's Rupert Baines. "The last year has shown just how versatile femtocell technology is. We believe that giving our customers the ability to put a femtocell on a USB dongle enables huge opportunities for Picochip, network equipment suppliers, makers of consumer products and service providers. It's part of our vision for driving the market forward. And for end users, access to enhanced cellular services will become as simple as plugging in a USB key."

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events



2011

DATE	EVENT	LOCATION	NOTES	LINK
Feb 6 - 9 2011	ISPO – the International Sports Business Network	New Munich Trade Fair Centre, Munich, Germany	Bluetooth SIG participating at Wearable Technologies Pavilion	http://www.ispo.com/en/Home/cn/vi/vicn/dates_facts
Feb 7 - 11 2011	Bluetooth SIG UnPlugFest (UPF) 38	Renaissance Hotel, Las Vegas, Nevada, USA	-	www.bluetooth.org (member log-in required)
Feb 14 - 17 2011	Mobile World Congress	Barcelona, Spain	-	http://www.mobileworldcongress.com/
March 15 - 19 2011	ISH 2011	Messefrankfurt, Frankfurt, Germany	Trade fair: Building, Energy, Air-conditioning Technology, Renewable Energies	http://www.ish.messefrankfurt.com/
April 11 - 14 2011	Bluetooth SIG All Hands Meeting	Intercontinental Hotel, Budapest, Hungary	Annual meeting for all Bluetooth SIG members	http://www.bluetooth.org (requires member logi-in)
April 12 - 14 2011	Bluetooth SIG All Hands Meeting	Budapest, Hungary	10th Annual All Hands Meeting	https://www.bluetooth.org/events/ahm/2011ahm/overview.htm (requires member log-in)
Jan 9 - 12 2012	Consumer Electronics Show (CES)	Las Vegas, Nevada, USA	-	http://www.cesweb.org

2012

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