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the internet
of things

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Issue 223



INCISOR.TV

2018 USA Roundtable

FEATURING:



SPECIAL ISSUE: INCISOR.TV 2018 USA IOT ROUNDTABLE

- 5G, MESH NETWORKING, HEALTHCARE ALL GO UNDER THE IOT MICROSCOPE
- NEW PARTICIPANTS BRING NEW THOUGHT PROCESSES
- US EVENT ATTRACTS BROAD INDUSTRY PARTICIPATION

PLUS | - PCH ALLIANCE: CONTINUA COMPLIANCE FOR IOT
- INDUSTRY NEWS

must watch TV

As I said in my introduction to our pre-CES issue, as I head out to the USA I am never quite sure who will be at our USA IoT Roundtable. Oh, yes, I know most of the companies that will be there, but it is not uncommon for additional participants to come on board at the last minute. Our 2018 event was one of those occasions.

My wife and I always add a few days holiday before arriving in Las Vegas. We try to do a bit of skiing, though this year this was compromised by a lack of snow at our normal resort – the Arizona Snowbowl at Flagstaff. There was an irony to this situation as we sat in our hotel room watching news reports detailing how something like 43% of the USA at that time had heavy snow cover, and some places were really, really struggling. Arizona? Not so much. Or at all.

However, our days in Arizona and Utah, en route to Las Vegas, were still punctuated by moments of tension as we wondered “will UL make it to the Roundtable or not?” I am delighted to say that this company, which has participated in the Roundtable programme on multiple previous occasions, was able to confirm its place. Thanks, guys!

Overall, I was very pleased with this year’s line-up. In addition to UL, we welcomed back regulars the EnOcean Alliance, Teledyne LeCroy and RTX. The Wi-Fi Alliance joined us for the second year and we welcomed some great new participants - the Personal Connected Health Alliance (PCH Alliance), providing an insight into developments in this hugely important area, and Ericsson. We were able to bring Ericsson’s 5G experience to the fore, as well as have an expert on connected automotive technology, a topic that always comes up in our Roundtable discussions.

This was, then, a superb line-up of industry experts. What ensued was one of our most interesting and educational discussions yet. As well as discussing 5G, IoT standards and latest developments, we went into detail on the potential – and the realities – of mesh networking in 2018. Unlimited numbers of nodes in a mesh network? Err, maybe not. We discussed voice assistants such as Alexa, Siri and Google home, and how they are faring in the home and the car. And we learned a lot about the implementation of connected and IoT solutions in the world of medical and healthcare.

Every year I suggest that you grab a cup of coffee and watch our Roundtable movie. Well, let me say so again as the 2018 event was seriously enlightening and the movie is an easy watch. Then watch the individual interviews with each of the participants.

Netflix? Who needs it when you have Incisor.TV.

Vince Holton

Publisher & editor-in-chief, Incisor / IncisorTV

INCISOR.TV FOCUS THIS MONTH



We have created a new trailer for Incisor and Incisor.TV – the digital home for smart IoT developers. Watch and enjoy!

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INCISOR.TV 2018 USA IOT ROUNDTABLE FULL MOVIE

- 5G, MESH NETWORKING,
HEALTHCARE ALL GO UNDER THE
IOT MICROSCOPE

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- ENOCEAN ALLIANCE
- ERICSSON
- PERSONAL CONNECTED
HEALTH ALLIANCE
- RTX
- TELEDYNE LECROY
- UL
- WI-FI ALLIANCE

PLUS:

PCH ALLIANCE: CONTINUA COMPLIANCE FOR IOT

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Standardisation of energy harvesting wireless and IP

The EnOcean Alliance and Digital Concepts have told Incisor that they are strengthening their collaboration to build a global network in the Internet of Things. Together, they will promote the development of smart building solutions based on the EnOcean wireless standard.

The partnership between the EnOcean Alliance and Digital Concepts promotes the standardization of smart building solutions by connecting the world of energy harvesting wireless technology with the Internet Protocol (IP). This makes it possible to integrate energy harvesting wireless sensor solutions based on the EnOcean wireless standard into scalable IoT systems, such as IBM Watson, Apple HomeKit and the Open Connectivity Foundation. In a completely interoperable network, collected data can be used for the intelligent control of different devices independently of the technology used, the wireless system or the manufacturer. This scenario, the two companies believe, forms the basis for the Internet of Things and cognitive buildings.

Together, the two partners are standardising the EnOcean-to-IP interface in order to simplify the use of IoT applications. This is facilitated by communication between the EnOcean protocol (ISO / IEC 14543-3-1X) and the IP protocol over an IP interface, which forms the basis for integrating the data into cross-standard, open platforms.

The result is a fully interoperable network, in which the data can be used for the intelligent control of different devices. This allows, for example, the integration of energy-harvesting wireless technology into the IBM Watson IoT Platform for predictive and real-time analysis of facilities. These solutions can be used for different applications, for example in asset management, ambient assisted living or insurance, hotel and campus projects.

Qualcomm announces new home hub platforms supporting Android Things

Qualcomm Technologies has announced two Qualcomm Home Hub platforms supporting Google's Android Things. These platforms are designed to help developers and original equipment manufacturers (OEMs) develop home hubs featuring Google services such as the Google Assistant. Additionally, the platform also includes System-on-Modules (SoMs), development boards and reference designs. Qualcomm believes that this set of platforms opens new possibilities for OEMs to accelerate the design, development and commercialization of a new generation of artificial intelligence (AI) -enabled consumer electronics products featuring rich digital assistant, touch display, video camera and immersive media. Harman and Lenovo are apparently working with Qualcomm Technologies on home products including the new Lenovo Smart Display using the Qualcomm Home Hub platforms.

The first of the Qualcomm Home Hub platforms for Android Things, based on the Qualcomm SDA212 SoC, is designed to enable home devices and appliances such as refrigerators, ovens and washing machines with digital assistant and audio capability. The platform incorporates echo-cancellation, noise suppression and "barge-in" capability, supporting a voice user interface in loud or noisy environments even when users are far from the device.

A more feature-rich variant of the Qualcomm Home Hub platform for Android Things, based on the Qualcomm SDA624 SoC, adds edge computing capabilities while bringing multimedia, video camera, touch display and more to Android Things devices such as smart displays, home monitoring cameras, smart thermostats and security panels. With this variant, home hub devices can support

advanced tasks including video conferencing, remote video monitoring, movie and video streaming and more.

Both platforms support Wi-Fi 802.11ac 2x2 MU-MIMO and Bluetooth connectivity using Qualcomm Technologies' QCA9379 chip.

Subsidized u-blox NB-IoT module for sale on China Telecom Tianyigou purchasing platform

u-blox, a developer of wireless and positioning modules and chips, has announced that its SARA-N201 NB-IoT module is now available on the China Telecom Tianyigou purchasing platform. Customers who purchase modules there are apparently eligible to receive a per-unit subsidy of RMB 20. SARA-N201 comes fully certified for operation on China Telecom's NB-IoT network and is in mass production.

Following a nationwide roll-out, China Telecom claims to operate the world's largest NB-IoT network. Last summer, the mobile network operator announced a 200 million yuan (US\$ 32 million) push to promote early development of NB-IoT applications that run on its network.

Perry Zhang, Principal Strategic Partnerships at u-blox told Incisor, "This is the first time that China Telecom has included a NB-IoT u-blox product in its online offering. Aside from increasing our visibility in China, this benefits our Chinese customers by qualifying them to receive financial support towards their purchase."

Additionally, the u-blox SARA-N200 NB-IoT module has passed China Unicom's certification test. u-blox confirmed that the SARA-N200 is also in mass production.



INCISOR.TV
EVENTS

2018 Incisor.TV USA IoT Roundtable

Experts gather to discuss and debate the most important issues affecting IoT and related industries.

Once again, Incisor.TV brings together some of the most knowledgeable and influential companies in the ICT and Internet of Things sectors.

IoT technology will underpin an overwhelming number of systems that enhance, facilitate and govern our lives. Few people know whether these systems are ready today. Do the technologies that are being promoted actually work? Are they regulated? Are security and privacy being handled with appropriate levels of importance and urgency? And – crucially – who will be the winners and losers, and who stands to make money?

These topics are the foundation of discussions at every Incisor.TV IoT Roundtable. We bring together people that really know the answers, and who, on a day to day basis, are the architects of our technological future.

Incisor.TV provides interested parties all over the world with a unique window into these highly charged as well as entertaining discussions.

Turn the page to access all of the Incisor.TV 2018 USA IoT Roundtable movies, coming to you from Las Vegas and taking place alongside CES, the world's largest technology event.





2018 Incisor.TV USA IoT Roundtable

IT'S MOVIE TIME!

The discussion that took place at the 2018 Incisor.TV USA IoT Roundtable event was probably the most lively we have had to date, and it was clear that we could have talked all day, and not just for our allocated time. We invite you, then, to put some time aside, put your feet up and watch the 2018 USA Roundtable movies.

The main event movie can be viewed by clicking on the movie screen below, while on the following pages you will see the movies we made with each participating company. As we do each year we interviewed each company separately, and you will therefore be able to hear in more detail the views of each individual and the company that they represent.

For those that hesitate on seeing that the main movie runs for almost an hour, I say that you're not understanding. This presentation is a web version of the type of informative programme that I watch on TV when I really want to learn about a subject. I'll almost not watch a documentary or debate on TV if it only runs for half an hour – you just don't learn enough. True, a one hour programme can be boring if the content is dull. But if you are genuinely interested in IoT, and you probably are as you are reading Incisor, then I promise you that your time will be well spent.

And thanks to all of this year's Roundtable participants. Your support is always appreciated. Vince Holton, Incisor.TV



ERICSSON



RTX



Click on the screen below to watch the Incisor.TV Roundtable movie

INCISOR.TV
2018 USA Roundtable

FEATURING:

enocean alliance
No Wires. No Batteries. No Limits.

ERICSSON

Personal Connected Health Alliance

RTX

TELEDYNE LECROY
Everywhere you look

UL

WiFi ALLIANCE

INCISOR.TV MOVIES



MEET THE ROUNDTABLE EXPERTS

The following pages include individual interviews that we carried out with each company that participated in the 2018 USA IoT Roundtable.

These companies help create the roadmap for the development of technologies and standards that affect all of us. In addition to the input each of our execs provide to the Roundtable event, this is our

opportunity to question them on their own activities and goals.

We had our opportunity to talk to these companies. If, after watching their interviews, you would like to know more about their products or services, email Vince Holton – vholt@incisor.tv – and he will put you in touch.



No Wires. No Batteries. No Limits. EnOcean Alliance is the only energy harvesting wireless standard and is dedicated to automation solutions for sustainable buildings using energy harvesting wireless technology and so to make buildings more energy-efficient, more flexible and lower in cost.

THANK YOU TO OUR PARTNERS: EnOcean Alliance, Ericsson, Personal Connected Health Alliance, RTX, Teledyne LeCroy, UL, Wi-Fi Alliance



Ericsson and partners have been working with 5G technology for several years in the labs, and over the last two years we took these technologies into advanced field trials. We have also signed first 5G commercial deals. To support development, rollout and continued management of connected vehicles, Ericsson offers end-to-end partnerships for vehicle manufacturers.



The Personal Connected Health Alliance (PCHAlliance) aims to make health and wellness an effortless part of daily life. The PCHAlliance, a non-profit organization formed by HIMSS, believes that health is personal and extends beyond healthcare. The PCHAlliance mobilizes a coalition of stakeholders to realize the full potential of personal connected health.



RTX offers wireless communication product design & development services in four application areas. Our specialist know-how makes it possible for global brands to freely innovate unique wireless communication solutions – delivering adapted simplicity to users and market advantage to businesses.



Teledyne LeCroy is a leading provider of oscilloscopes, protocol analysers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. We focus on creating products that improve productivity by helping engineers resolve design issues faster and more effectively.



UL works with customers and stakeholders to help them navigate market complexity. UL brings clarity and empowers trust to support the responsible design, production, marketing and purchase of the goods, solutions, and innovations of today and tomorrow. We connect people to safer, more secure, more sustainable products, services, experiences and environments.



Wi-Fi Alliance® is the worldwide network of companies that brings you Wi-Fi. Wi-Fi Alliance defines innovative, standards-based Wi-Fi technologies and programs, certifies products that meet quality, performance, security, and capability standards, provides industry thought leadership, and advocates globally for fair spectrum rules.



Interviewee:
Graham Martin
Chairman and CEO, EnOcean Alliance

www.enocean-alliance.org



Interviewee:
Magnus Gunnarsson
Head of Strategy, Portfolio & Business Development, IoT Connected Vehicles, Ericsson

www.ericsson.com/en/industries/automotive





**Personal
Connected
Health
Alliance**

Interviewee:
Michael Kirwan
Personal Connected Health Alliance, Vice President, Continua

www.pchalliance.org



Interviewee:
Jens Christian Lindof
Vice President and Head of Design Services, RTX

www.rtx.dk



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Interviewee:
David Bean
General Manager, Teledyne LeCroy

www.teledynelecroy.com/frontline

A video player showing a man in a brown suit and light blue shirt. A white play button icon is centered over the video. The player interface includes a progress bar, a volume icon, and the text 'INCISOR.TV MOVIES' on the left.



Interviewee:
Mick Conley
Development Manager, Industry Programs, UL

www.ul.com

A video player showing an older man with a white beard and glasses, wearing a black leather jacket over a grey shirt and tie. A white play button icon is centered over the video. The player interface includes a progress bar, a volume icon, and the text 'INCISOR.TV MOVIES' on the left.



Interviewee:
Kevin Robinson
Vice President, Marketing, Wi-Fi Alliance

www.wi-fi.org



DETAILS OF THE NEXT INCISOR.TV IoT ROUNDTABLE COMING SOON

Snippets

STMicroelectronics Launches IoT-Enabled "Introduction to Embedded Systems with SensorTile" Curriculum

STMicroelectronics has announced the availability to students, makers, and budding engineers and computer scientists of the "Introduction to Embedded Systems with SensorTile" course.

With a curriculum developed by Professor William Kaiser at the University of California, Los Angeles (UCLA), and used to teach his freshman engineering class, the online course resources provide a foundation to understand the fundamentals of a sensor-based Internet of Things (IoT)-enabled embedded system. The introductory course of 8 self-paced tutorials is designed around ST's SensorTile, a real-time IoT-enabled embedded system on a postage-stamp-sized module. A kit with the module, cables, cradles, and a battery is available for about \$80.

Voice of IoT - DECT and ULE Technology Summit 2018

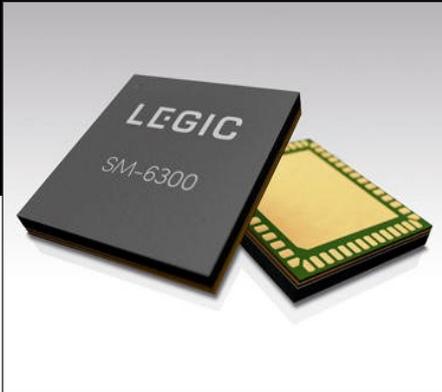
The DECT Forum and ULE Alliance hosted the "Voice of IoT – DECT and ULE Technology Summit" 2018 in Amsterdam earlier this month at business networking hub B.Amsterdam. The Summit included a conference on the first day and F2F Working Group meetings and General Assemblies on the second day.

The conference, which was supported by member companies such as Deutsche Telekom, DSP Group, Dialog Semiconductor and RTX, addressed recent global business and technology developments in both DECT and ULE and gave insights into how service providers, product vendors, design house, soft- and hardware manufacturers can benefit from the advances in the DECT and ULE technologies in order to enable new market opportunities.

u-blox technology provides cellular connectivity for a professional IoT platform

u-blox has announced that its SARA cellular module series will provide wireless connectivity for a new end-to-end platform for Industry 4.0. With the platform, developed by Italian-based Iomote, businesses will be able to connect existing machines to the cloud to increase efficiency and augment their service offering. Iomote presented its new solution in a series of workshops that started at the recent Microsoft House in Milan.

The centerpiece of the platform is Iomote's smart, programmable X400 gateway, which adds cloud connectivity to virtually any industrial application.



Bluetooth LE module supports highly secure applications

LEGIC, a Wetzikon, Switzerland-based contactless identification solutions provider, has employed Nordic Semiconductor's Bluetooth Low Energy nRF52832 Wafer Level Chip Scale Package in its SM-6300 module. The module is designed to support highly secure, personal identification and access applications using Bluetooth LE wireless connectivity.

The SM-6300 module offers a development platform for engineers designing applications requiring a secure wireless identification process, for example storage or payment solutions, access to shared-economy assets like bikes and cars, physical access control in corporate and hospitality environments, and wireless connection to the Internet of Things (IoT).

According to Nordic, the SM-6300 provides Bluetooth LE wireless connectivity with Android and iOS mobile apps, third-party Bluetooth LE devices, and the LEGIC Mobile Software Development Kit (SDK). The module integrates LEGIC's Secure Element, a tamper-proof, security-certified microcontroller "shelter" where all cryptographic keys are stored, and security-relevant firmware is executed. In addition, the module works with LEGIC's technology platform, a product for secure reader and smartcard ICs and the LEGIC Connect trusted service with integrated key and authorization management.

The nRF52832 WL-CSP offers all the features of the conventionally-packaged SoC, including a 64MHz, 32-bit Arm Cortex M4F processor. The Arm processor runs Nordic's S132 SoftDevice (a Bluetooth 5-certified RF software protocol stack) as well as the module's security, ID and access firmware. In addition, the processor and 512 kB Flash memory support Over-the-Air Device Firmware Updates (OTA-DFU).



The WL-CSP is supplied with Nordic's S132 SoftDevice which offers Central, Peripheral, Broadcaster and Observer Bluetooth LE roles, supports up to twenty connections, and enables concurrent role operation.

China Unicom Research Institute joins the Zigbee Alliance

China Unicom Research Institute, one of China's three major mobile service carriers, has joined the Alliance at the Participant level.

In 2015, the China Unicom Research Institute initiated the Smart Home Standardization United Group (SSUG), which drew in a number of well-known enterprises in the industry, including FiberHome, ZTE, and Wulian, and took the lead in developing implementation standards from devices to gateways and further to the cloud. Zigbee has been adopted by SSUG as a wireless communication standard for connecting end devices to the gateway. Based on the understanding of market demand and through laboratory test results, SSUG has proposed a number of parameter recommendations and additional mandatory features to improve user experiences.

After joining the Zigbee Alliance, SSUG will actively participate in standards development working groups and seek to integrate its work into international standards, while also proposing Zigbee technology be accepted into China's industry standards, including in the smart home market.

China Unicom has branches in 31 provinces (autonomous regions and municipalities directly under the Central Government) of China, as well as branches overseas. The Research Institute is not only the R & D and



innovation center of China Unicom, but also serves as a high-end think tank for the group's decision-making and strategy setting. Its core study area covers new technologies and their applications, including mobile internet, industrial internet, cloud computing, big data, the Internet of Things, mobile terminals, and more.

Identity and Management of Things in the IoT a US\$21.5 billion opportunity

IoT Platform services along with security, cryptography, digital certificate management and data exchange services are propelling IoT Identity and Management revenues toward US\$21.5 billion by 2022, says ABI Research, a market-foresight advisory firm providing strategic guidance on transformative technologies. The US-based company predicts that IDoT (Identity of Things) services are expected to grow significantly over the next five years with most of the revenues being driven primarily by industrial, manufacturing, and automotive market verticals.

Dimitrios Pavlakis, Industry Analyst at ABI Research told Incisor, "Through 'smarter gateways', cloud services, and application programming interface (API)-focused solutions, thing identity and management services are steadily finding their way in a wider spectrum of IoT verticals." Although certain verticals are still lagging in terms of security, ABI believes that IoT vendors are finally starting to invest more on encryption and device certificate management. Pavlakis suggested that aftermarket telematics, fleet management, OEM telematics, metering, home security, and automation are among the most important verticals absorbing more than 60% of the total revenues worldwide.

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The ULE Alliance enjoyed a very successful CES 2018 in Las Vegas, showcasing the latest ULE devices for Smart Home IoT applications, supported by member companies Crow, Deutsche Telekom, DSP Group, Sercomm, SGW Global, Tilgin and VTech.

The ULE products demo at the booth of the ULE Alliance and also the guided tour for member companies were both very well received.



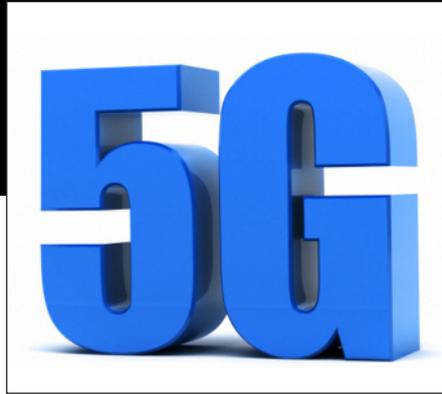
www.ulealliance.org

“CES is a must-attend event for us. Coming back next year is high on our agenda”



*said Sylvia Schmidt,
Marketing Chair of
the ULE Alliance.*





IHS Markit identifies top trends driving IoT

Driven by the need for intelligent connected devices in industrial and commercial applications, the number of connected Internet of Things (IoT) devices globally will grow to more than 31 billion in 2018, according to new analysis from business information provider IHS Markit.

In its latest IoT Trend Watch report, IHS Markit identifies four key drivers and the trends that will impact the IoT this year and beyond:

Innovation and competitiveness: The IoT opportunity has attracted numerous duplicative and overlapping wireless solutions such as Bluetooth, Wi-Fi, 5G, NB-IoT, LoRa and Sigfox. Standards consolidation lies ahead, but confusion and fragmentation will dominate in the near term.

Business models: 5G builds upon earlier investments in M2M (machine-to-machine) and traditional IoT applications, enabling significant increases in economies of scale that drive adoption and utilization across all sectors of industry. While Cellular IoT gateways, which facilitate WAN connectivity, will be integral to edge computing deployments. 2018 will bring increased focus on compute capabilities and enhanced security for cellular IoT gateways.

Standardization and security: Cybersecurity is a leading concern for IoT adopters. IoT deployments face critical cybersecurity risks because there are potentially many more IoT devices to secure compared to traditional IT infrastructure devices. Despite the promise it holds, blockchain — a technology for securely storing and transferring data — is not a panacea. Initially, IoT applications for blockchain technology will focus on asset tracking and management.

Wireless technology innovation: IoT platforms are becoming more integrated. Currently, there are more than 400 IoT platform providers. A key inflection point for the IoT will be the gradual shift from the current “Intranets of Things”

deployment model to one where data can be exposed, discovered, entitled and shared with third-party IoT application developers.

Qualcomm demonstrates the next phase of 5G NR technology roadmap

Qualcomm Technologies has been showing demos of advanced 5G technologies for the next phase of the global 5G New Radio (NR) standard being developed by 3GPP. Following the recent completion of the first 5G NR standard to accelerate enhanced mobile broadband deployments starting 2019, 3GPP has approved various technology studies that are expected to define the next phase of 5G NR in Release 16 and beyond. The Qualcomm Technologies’ demonstrations, which occurred live at an event in San Diego on February 7th, showcased the company’s work in developing 5G NR technologies that helps drive the evolution and expansion of the mobile ecosystem.

Durga Malladi, senior vice president, engineering, Qualcomm Technologies told Incisor, “In the same way that our early R&D work on 5G led to the accelerated completion of the first 5G NR standard for enhanced mobile broadband, these demonstrations highlight our continued commitment to inventing technologies that help drive the mobile ecosystem forward. We’re excited to demonstrate these advancements at Mobile World Congress and showcase how our technologies are designed to expand the reach of 5G NR to new industries, new deployment and business models, and new ecosystem participants.”

Among the demonstrations, Qualcomm Technologies showcased a live over-the-air demonstration of 5G NR spectrum sharing technologies. The use of 5G spectrum sharing technologies is expected to bring higher levels of mobile broadband performance to unlicensed

and shared spectrum, as well as play an important role in extending 5G into new types of deployments such as private networks for industrial IoT.

Wireless, radiowave-free internet now integrated in hospitals

Oledcomm is now shipping LiFiCare, a LiFi lamp that provides wireless, radio wave-free internet connection which is aimed at the medical world. Olecomm says that LiFiCare allows healthcare specialists to access the medical records of a patient in a secure and confidential manner, and provides individual and RF-free access to patients.

The company notes that the use of network connectivity is regulated in the medical and hospital fields. In some cases, Wi-Fi use and 4G are prohibited as they can interfere with medical equipment and harm patients, particularly children that are sensitive to electromagnetic waves.

LiFiCare uses LiFi technology, which allows mobile devices (and other connected objects) to connect to each other by using LED lights. LiFi transmits data by modulating the light signals from an LED light bulb – a process that is invisible to the human eye. Light signals are received and converted into data by a dongle connected to computers or tablets equipped with USB-A or USB-C cables.

In a hospital environment, LiFi can be used to transmit medical information, and was created in partnership with Biolume and LiD Lamps. It attaches on the headboard of a patient’s bed, and thanks to a dongle connected to a tablet, the doctor can access the medical record of the patient without using RF. Since the transmission of information follows the light beam, the data remains confidential and only the approved medical staff present in the room can access it.

LiFi has already attracted the attention of medical professionals. Specialising in prenatal care, French Hospital Perpignan has ordered 12 LiFiCare units to equip 6 rooms.



INCISOR.TV MOVIE CLASSICS

Incisor.TV has been producing web video content for the connected device market since 2006, and we have covered some milestone events and moments along the way. We thought we would reminisce and share some of these with you.

These movies were both made in 2011 and are in pretty old formats. Your browser may ask you to enable Adobe Flash or Quicktime – ours did!

As usual, click on the screens to watch the movies.

Bluetooth SIG 2011 All Hands Meeting: Board of Directors panel



Making the case for ANT in sports and fitness



events



DATE	EVENT	LOCATION	NOTES	LINK
Feb 26 - Mar 1 2018	GSMA Mobile World Congress	Fira Gran Via, Barcelona, Spain		http://www.tradefair.co.uk/trade-shows-and-events/444/Barcelona--Mobile-World-Congress-2018/
March 5 - 9 2018	Personal Connected Health Alliance at HIMSS18	Las Vegas, Nevada		http://www.pchalliance.org/himss18
June 5 2018	Wi-Fi Alliance Member Meeting	Manhattan Beach, California, USA		https://www.wi-fi.org/wi-fi-alliance-member-meeting-manhattan-beach
Jan 7 2019	Incisor.TV USA IoT Roundtable	Las Vegas, USA	Further info – email vholton@incisor.tv	www.incisortv.co.uk
Jan 8 - 11 2019	CES 2019	Las Vegas, USA		https://www.ces.tech/About-CES.aspx

LET INCISOR AND INCISOR.TV HELP DISTRIBUTE YOUR MARKETING MESSAGES TO THE IOT COMMUNITY

Our IoT Roundtable issues are always our most widely read and distributed issues of the year, and deliver our partner's messages to a diverse global audience of IoT and connectivity industry watchers. In these issues, and in every issue of Incisor throughout the year there are opportunities to contribute editorial, advertising, to market directly to the Incisor subscriber base and, yes, there are always some special deals available.

If you would like to participate or would like further information on partnership opportunities with Incisor, please contact **Vince Holton:** vholton@incisor.tv,
Nick Kohn: nkohn@incisor.tv or sales@incisor.tv

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

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