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Embedded Insiders: embedded world 2017 Day 1 and 2 Recap

Rich Nass, Embedded Computing Brand Director *and* Brandon Lewis, Technology Editor

Embedded Computing Design editors Rich Nass and Brandon Lewis review some of the highlights from days one and two of embedded world 2017, including how software and solutions continue to eat the world, and the embedded and Internet of Things (IoT) industry's continued delivery of development kits. **Continued...**

embedded world 2017: Cactus Tech's Industrial-Grade Flash Scales for IIoT App Requirements

Rich Nass, Embedded Computing Brand Director

At embedded world 2017, Rich Nass, Executive Vice President of Embedded Computing Design continues his search for Industrial Internet of Things (IIoT) technology, and finds Steve Larrivee, Vice President of Sales and Marketing at Cactus Technologies, Ltd. There, at Hall 2, Booth 251, Steve discusses the company's industrial-grade flash memory portfolio. **Continued...**

Analytics “at” the edge, on the device, in real time

Michel Genard, Wind River *and* Chad Boulanger, Greenwave Systems

It takes time for information to travel from the edge of the Internet of Things (IoT) to the cloud and back. That’s what happens every time a node takes a measurement, sends it to the cloud to do some sort of analytical calculation, then sends it back to the edge for an action to occur. Unfortunately, there are instances where this is not a viable scenario, including those in the medical, automotive, and military markets. With Industrial IoT (IIoT) hitting the mainstream, the need… **Continued...**

embedded world 2017: Security and the software-defined Internet of Things


Thibaut Rouffineau, Canonical Ltd.

As we look forward to Embedded World 2017, it's hard not to notice how far the Internet of Things (IoT) has come since last year's show, and how deeply engrained its impact is starting to become on our day-to-day lives. From dash buttons and smart home thermostats to virtual assistants and Amazon Alexa, the IoT has moved from a theoretical concept to a functional, everyday reality. No doubt this year's show will feature yet more outstanding IoT devices, and a whole new generation of… **Continued...**

Testing is the only way to assure that code is correct


Jay Thomas, LDRA Technology

As systems in industrial, automotive, medical, and energy markets that involve human life and limb are connected to the IoT, the stakes get higher and the pressure for safety and reliability increases. While hardware can be physically isolated and protected, once the system is connected to the Internet, it becomes exposed through software, which forms the "soft underbelly" of the IoT. And if they're not secure, they can't be considered reliable or safe. That means the battle for safe and secure devices takes place… **Continued...**

Possible 802.11p, LTE-V automotive wireless coexistence underscores test necessity for V2X and connected cars


Brandon Lewis, Technology Editor

The infrastructure required for vehicle-to-vehicle (V2V) and vehicle-to-everything (V2X) communications is slowly being tested and deployed by governments, automotive manufacturers, and technology companies, but different technologies and unique geographies are a challenge that must be overcome as the U.S., Europe, and Japan each pursue separate connected car strategies. An example of this is the desire to leverage 802.11p and/or LTE-Vehicle (LTE-V) communications standards in future V2X applications, a possible coexistence that demands extensive verification of wireless automotive environments to ensure safety and quality user… **Continued...**

The OpenFog Reference Architecture: A baseline for interoperability in the IIoT cloud-to-things continuum


Brandon Lewis, Technology Editor

Fog computing concepts have been floating in the ether for some time now, but it seems that industry has been challenged to put the theoretical models

behind the architecture to use in the real world. Recently, however, the OpenFog Consortium released the OpenFog Reference Architecture (RA), a foundational document that will enable interoperable semiconductors, systems, and software for Industrial Internet of Things (IIoT) stakeholders, industry-wide. In this roundtable interview, Dr. Maria Gorlatova, Associate Research Scholar at Princeton University and Co-Char of the OpenFog Consortium… **Continued...**

The voice of machine learning starts and ends with humans

Mark Benson, Chief Technology Officer, Exosite

The Internet of Things (IoT) represents new opportunities for manufacturers to capitalize on the value of data for their business. One of those opportunities is through leveraging an approach called machine learning, which is a branch of artificial intelligence that enables machines (or virtual representations of machines in the cloud) to learn new behaviors based on their external environments, internal health, and changing inputs. However, in order for machine learning to work, humans must be able to grok the context of how the machine… **Continued...**

Arduino development boards: The Nano

Jeremy Cook, Engineering Consultant

As touched on in my first post on the Arduino Uno , Arduino development boards have in many ways revolutionized hobby, and now MakerPro electronics. No longer does one have to spend close to $100 for a tiny computer that will turn on a light bulb in response to a sensor, they can now be had for less than $10. If this is true of the Uno (which I'll be using as a basis for comparison), it's even more true for its little brother, … **Continued...**

The Embedded Insiders Podcast: Listen to Linus

Brandon Lewis, Technology Editor *and* Rich Nass, Embedded Computing Brand Director

Technology Editor Brandon Lewis attended the Embedded Linux Conference in Portland, Oregon this past week. There, Linus Torvalds, the creator of Linux, commented that "Linux has to remain a general purpose operating system." Where does that leave embedded and Internet of Things (IoT) developers looking to leverage the open source and time to market benefits of the Linux kernel in applications that require small memory footprint and real-time determinism? The answer, of course, isn't straightforward, but Lewis and Rich Nass, Executive Vice President of… **Continued...**

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