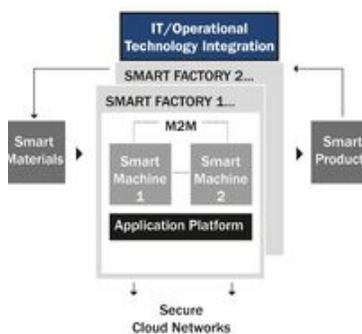


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Advances in sensing, connectivity, and control fuel IIoT designs



Wiren Perera, ON Semiconductor

The Industrial Internet of Things (IIoT) promises to deliver a step change in efficiency and a leap towards autonomy for industrial automation and other sectors, such as security and surveillance and building management. The prospect of self-monitoring, self-managing factories and manufacturing processes is no longer beyond the distant horizon. The ability to remotely identify, monitor, and control every individual device on a manufacturing process network with minimal or no human intervention offers opportunities that were beyond comprehension just a decade ago – even in the eyes of engineers working at the very forefront of industrial manufacturing technology. At the core of achieving the IIoT's true potential will be the effective interplay and connection of sensing, computing, and control technologies in robust, energy-efficient implementations.

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Five minutes with ... Mark Shuttleworth, Founder of Ubuntu



Rich Nass, Embedded Computing Brand Director

Mark Shuttleworth is the founder of Ubuntu and he also leads product design at Canonical. So who better to discuss the use of open-source software, specifically its future. With so much software available, I asked Mark how you can ensure that the software you've chosen works, is bug-free, and is safe.

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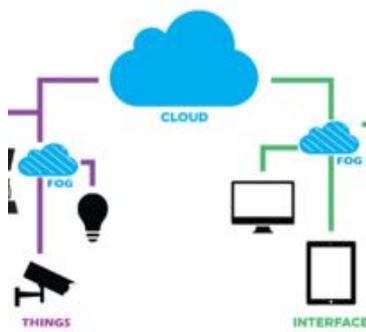
Machine vision with the Raspberry Pi



Jeremy Cook, Engineering Consultant

If you've been living under a technological rock for the last few years, the Raspberry Pi is a single-board computer available for under \$50. This device is capable of many computing tasks and, because of its low cost and small form factor, it's popular in MakerPro projects for small robotics applications or even video game [...]

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IoT and fog computing: Connecting any device to any cloud over any network



Vincent Perrier, MicroEJ

It is understood that IoT devices may not connect to the cloud like PCs and mobile clients (smartphone and tablets) do. IoT devices are likely to connect to narrowband, potentially short range, high latency, and intermittent networks – and data delivered from IoT devices is likely to be transmitted to servers in the cloud through [...]

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Latest DSP IP suits high-end applications



Jamie Leland, Content Assistant

Cadence Design Systems launched the latest IP in the Tesilica Fusion family, the G3. The DSP serves as a fixed and floating-point VLIW processor designed for multi-purpose, compute-intensive signal processing applications. General-licensing availability begins this October. The high-performance DSP gives designers and developers flexibility in their hardware and software choices. It's also designed to enable [...]

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Building trust in a model-based automatic code generator



S. Tucker Taft AdaCore

How do you go about building trust in an automatic code generator used for safety-critical systems? For example, given a code generator that takes a real-time model for a flight control system represented in Simulink and Stateflow and turns it into MISRA C or the SPARK subset of Ada, what process could ensure that the [...]

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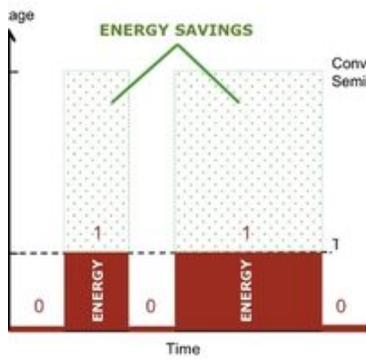
Verification is crucial for programmable SoC designs



Louie De Luna, Aldec

A classic signal processing approach is decimation, using hardware techniques to preprocess high-speed incoming data into a more manageable lower-rate stream for software to operate on using one or more compute cores. Decimation suits applications such as embedded vision, software-defined radio, radar and lidar, and newer ideas including multiprotocol IoT gateways and real-time data analytics [...]

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Sub-threshold circuitry: Making Moore's about power, not performance



Brandon Lewis, Technology Editor and



Jamie Leland, Content

Assistant

As silicon geometries approach the edge of physics, a new rule of thumb is poised to govern the computing industry: "Thou shalt reduce power consumption by 50 percent every two years." How could that be possible? Sub-threshold voltage circuitry. The ULPBench is a standardized benchmark developed by the Embedded Microprocessor Benchmark Consortium (EEMBC) for measuring [...]

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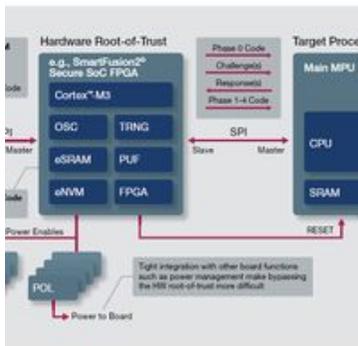
Check these boxes before deploying IoT devices



Donald Schleede, Information Security Officer, Digi International

There was a time when isolation helped ensure IT system security. Mainframes lived in glass rooms accessible to a few carefully screened attendants. If there was any kind of network, it existed within the building and provided wired connectivity for a flock of dumb terminals. The big change came with the arrival of the Internet. [...]

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Issues of trust in silicon



Jason Oberg, Tortuga Logic

Trust in modern silicon is something most of us take for granted. Many techniques are used to build security features into silicon, including Adding security extensions, such as ARM's TrustZone, to processors to allow them to run in secure and non-secure modes, Implementing Trusted Platform Modules (TPMs) designed to secure hardware by integrating cryptographic keys, [...]

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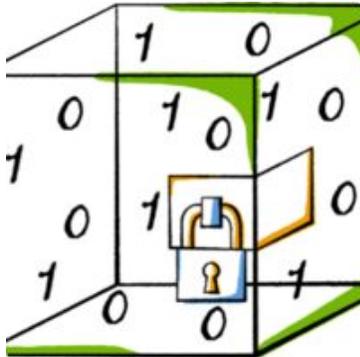
The long road to autonomous cars



Majeed Ahmed, Automotive Contributor

The technology and trade media is abuzz with deadlines for the arrival of autonomous cars, but pundits and technology observers are clearly missing a point: it's evolution, not revolution. The fact that the Traffic Safety Administration has defined five different levels for self-driving cars — complete driver control to complete autonomy — is a testament [...]

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Protecting the IoT with self-encrypting storage, part 2



Michael Willett, Drive Trust Alliance and



Jon Tanguy, Micron

As noted in part one of this blog , self-encrypting storage (SES) will increasingly be required to protect embedded products, especially as the Internet of Things (IoT) expands. This encryption is already available in SED products. However, the next step is activating the drive and managing the authentication credentials to lock and unlock drives and only allow authorized access to the drive.

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WHITE PAPER

White Paper: A Ten Point Guide for Managing Requirements for the Internet of Things (IoT)

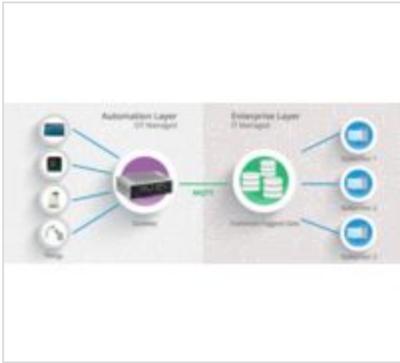


Staff, IBM

The Internet of Things (IoT) offers many exciting opportunities for product innovation, new business models, and expanding revenue streams. Companies looking to take advantage of these opportunities should start with a strategic approach to requirements management that will transform products into connected systems. To help companies think through the various impacts of IoT on requirements, TechClarity offers these ten tips.

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