



'C' lands on FPGAs to make embedded multicore computing a reality



Rory Dear, European Editor/Technical Contributor

Through intense innovation and development, the primary face of embedded computing has changed constantly throughout the decades, but it's only relatively recently that parallel processing by means of multiple processor cores has even been possible. Some have argued that the single-purpose nature of embedded computers rendered multicore processing unattractive, and it's true that even today there exists a multitude of legacy applications where single-core performance remains king – a result of developers not designing for multicore. Given the predominantly asymmetric nature of processing tasks...

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Leveraging embedded industry standards for flexible IoT gateway designs



Dan Demers congatec

Market research firm VDC emphasized in a recent study that Internet of Things (IoT) gateways are the essential link between heterogeneous local sensor networks and enterprise applications. The following case study explores the challenges of implementing such a solution, and how MyOmega Systems Technologies was able to develop a uniquely flexible and secure IoT [...] [Continued...](#)

Picking a portable Internet of Things operating system



Brandon Lewis, Technology Editor

Hardware/software architectures of the cloud and datacenter are well defined, so much so that "Wintel" and "Lintel" (Windows/Intel and Linux/Intel) became common jargon in

networking circles in the middle part of the 2000s. This makes you wonder if an IoTopia can exist where common operating systems run as seamlessly on sensor modules as network [...] [Continued...](#)

One-stop shops, companies wanting the complete solution



Rory Dear, European Editor/Technical Contributor

In its youth, the embedded industry was far less open than it is today. Innovators were keen to keep their advances under wraps for competitive gain, and few companies offered any kind of complete solution. Often the expectation from those early embedded experts was that anyone considering their first embedded development must become an expert themselves to be worthy of entering that exclusive club. In their limited defense, as our industry was far more niche than it is today, new and early adopters often... [Continued...](#)

Obsolescence or opportunity?



Rory Dear, European Editor/Technical Contributor

Recently I heard a phrase that I now struggle to dislodge from my brain: “Obsolescence is opportunity.” On the surface, it is the polar opposite of how most of us view it. “Obsolescence” is for many a dirty word, a potentially catastrophic risk that we do our best to pseudo-manage, but in reality, we have little control over it. Attempting to address past failures, the embedded industry has been crowbarred into guaranteeing longevity of products, but with those containing hundreds of components from a... [Continued...](#)

The winning IIoT strategy must include deliverability, scalability, and reliability



Rich Nass, Embedded Computing Brand Director

As we enter the Fourth Industrial Revolution, the manufacturing industry is taking a leap of faith, and that faith needs to be backed up. Specifically, that leap of faith refers to the Industrial Internet of Things, also known as the IIoT. Dell is hoping to reduce some of the angst typically associated with such a [...] [Continued...](#)

Rise of the machines for cyber defense: Artificial intelligence to augment IoT security amidst growing attack vectors



Brandon Lewis, Technology Editor

Today’s security teams are tasked with protecting critical embedded, IT, and business systems from a growing number of cyber threats, some of which can mutate to expose vulnerabilities and evade traditional defense mechanisms. In this interview with Amir Husain, Founder and CEO of SparkCognition, he addresses the shortcomings of traditional security technologies against advanced [...] [Continued...](#)

Are graphics finally important in embedded systems?



Rory Dear, European Editor/Technical Contributor

For decades graphics capability was the also ran , either only required for development or displaying a crude and basic GUI. Now expectations have moved on to immersive multi-touch, animated/video experiences, even in the embedded and industrial space. Arguably, what used to be known as “embedded” defined a headless system, one invisible to the user and deeply embedded into a device. Through the decades, that user interface has evolved from basic power-on/activity LEDs, to calculator-esque liquid crystal displays, to full-color LCDs, and now e-ink... [Continued...](#)

Has Microsoft forgotten about embedded?



Rory Dear, European Editor/Technical Contributor

It's fair to say that nowadays, what most consider to be “embedded” has shifted. Previously synonymous with SBCs, HMIs, and small form factor industrial PCs, the shift in interpretation has moved from board-level product (and associated complete solutions) closer to the component level. IoT endpoint devices using few but highly advanced components are what embedded describes now, for many. Whilst the new embedded is undergoing exponential growth, the market for what we perhaps now must call “industrial embedded” remains vast. Thus, I was surprised... [Continued...](#)



Current and future possibilities with wireless energy harvesting



Frank Schmidt, EnOcean GmbH

Energy can be found everywhere – in the movement of doors and windows or machine components, the vibration of motors, changing temperature or variances in luminance level. These energy sources, which usually remain unused, can be tapped by means of energy harvesting to power electronic devices and transmit wireless signals. This technology is just starting to unfold its potential. The improvement of components and system design setup will open up new applications, particularly in the field of the Internet of Things (IoT). Wireless energy... [Continued...](#)



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