

Distribution and the Design Engineer: Delivering the “How”

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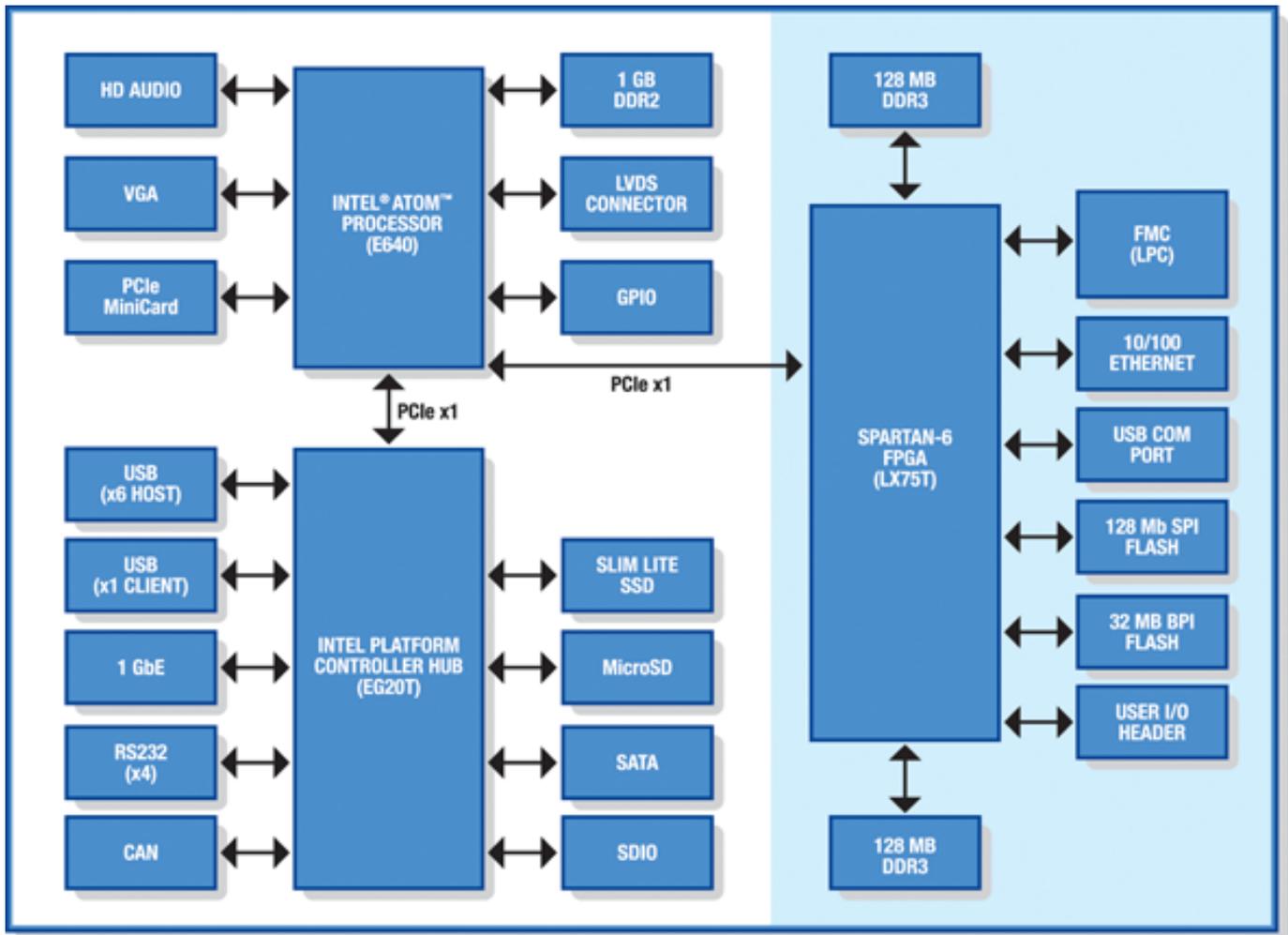
The distribution channel has been engaged with the design community for more than 30 years. In that timeframe, innovation and advances continue to make a lasting and profound impact on how design engineers accomplish their goals. Twenty five years ago the first stop for an engineer with a question was the prized set of databooks in their cubicle or site library – which in many cases distribution sales teams kept diligently up-to-date. Next, and continuing to this day, distribution field application engineers (FAEs), trained and certified by supplier partners, provide support for designs with access to key factory contacts and resources. While FAEs are as important today as ever, the Internet has changed how the distribution channel supports designers’ goals and helps them get their projects to market faster.

In the book “How,” Dov Siedman drives the point home that we are in an age where information is transparent, with access to anyone willing to take the time to find it. Engineering support in distribution has moved beyond the world of “what” (datasheets, databooks, simple troubleshooting, etc) and moved into the era of “how.” Distribution has transitioned into the era beyond simply providing information (which is still an important “what”), but how that information flows together and creates powerful solutions and synergies. Two specific areas where the channel helps engineers with the “how” are custom solutions combined with just-in-time training.

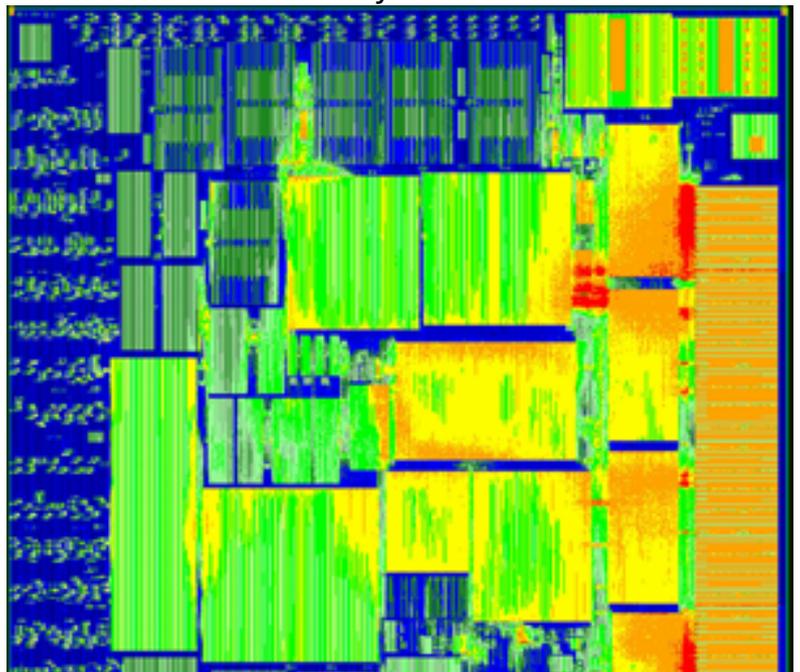
A recent example of just-in-time training focused on solutions is Intel and Xilinx. Intel is making great strides to re-enter the deeply embedded processing market. They have recently announced a variant of the Atom Processor is to be used in several of upcoming tablets. Avnet developed a custom Xilinx development board and training around the Intel Tunnel Creek device, which has a PCI-Express lane and an FPGA -- to give designers the knowledge of what it would take to design this type of x86 architecture in a deeply embedded system. Based on the Avnet Spartan-6 + Atom Development Kit, this course covers the design and development flows for the Atom and FPGA with hands-on labs focusing on using the FPGA for a custom peripheral. The key link that ties the Atom to the Spartan-6 is the PCI Express Endpoint hard IP block in Spartan-6. The course examines the details of this IP block and explores how to use it with the Avnet Spartan-6 + Atom development kit. The Intel Atom processor allows for many choices of an operating system, which in turn, is needed to tie the FPGA hardware to an application running on the Atom processor. The course also looks at what some of these OS options are and examine their benefits and tradeoffs.

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As a sign of the times - this course is taught by distribution engineering staff. There are many other examples of this type of effort in the channel, where highly technical trainings are taught by distribution staff -- all to educate the design engineer on designing solutions, whether it is in the general areas of power, lighting, or specific FPGA techniques. Over the course of a year there are well over 50 unique technical training events



being delivered by distribution applications engineers, to audiences that number in

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the thousands engineers covering a wide array of topics and technologies.

Along with training, the distribution channel has made large investments in customized solutions to help design teams get their product to market faster as well. In the Americas alone, there are well over 100 design engineers working in the areas of ASIC or custom board design in the distribution channel. These groups focus on both general purpose board design for reference and development purposes (as was the case with the Intel development kit referenced above), to custom chip solutions for specific clients. Distribution has resources available to manage to the entire ASIC process, from product definition, RTL design through layout and release for fabrication. In fact the channel tapes out upward of a dozen ASICs every year for customers. An innovative twist on the custom solution is being pioneered by the distribution channel in Europe. Unlike the ASIC model where the relationship is one to one from a design and customer standpoint, they are aggregating the needs of customers and working with key partners to develop custom solutions for groups of customers with similar design challenges. In Asia it is common for distribution to design complete systems for customers, meeting their exacting specifications.

As the speed of access combined with the transparency of information has revolutionized the world of the design engineer, distribution has evolved to support those needs. Well trained and knowledgeable field application engineers are only part of the equation today. Helping speed the engineer’s path to a completed design is the primary goal, and this requires several mutually supportive activities. One is training on real world design applications. Educating the engineering community on designing solutions, while leveraging many partners and their particular expertise, will be a continuing driving force moving forward. Another is providing an extension to the customer’s design team to develop custom solutions should the need arise.

Distribution recognizes that a great design is much more than the sum of the components that make it to the board. The channel invests hundreds of millions of dollars every year in engineering support with one goal in mind, helping the designer reach theirs.

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