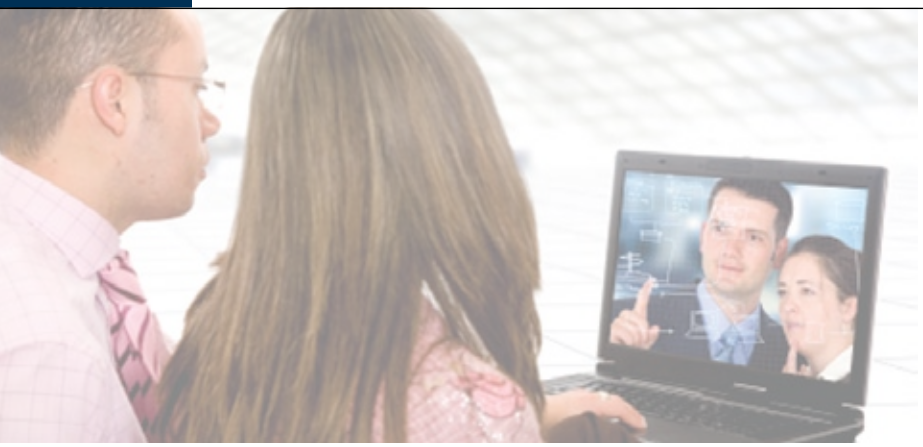
EDITOR'S FOREWORD

Why get into this business?

By Joe Pavlat



One answer to that question comes with a glance at this 2008 edition of the *CompactPCI and AdvancedTCA Systems Resource Guide*, which shows a diverse and growing embedded computing ecosystem. Many new products appear this year, and they point to both AdvancedTCA's wide ranging adoption and field deployment and to the continuing intense interest in MicroTCA in its many flavors.

More specific answers to my question appear in this issue's interview with Stephen Dow, who led the charge in the recent acquisition of Motorola's Embedded Communications Computing group by Emerson Network Power. Stephen is a colleague and a good friend, and I was curious as to why Emerson, which is not exactly known in embedded computing circles, would want to get into the business. His answers are quite thoughtful and illuminating, and they tell me that Emerson is going to be a major global player in AdvancedTCA, MicroTCA, and other segments of the embedded computing business. His enthusiasm is infectious.

This issue also includes my recent Q&A with Jasmin Ajanovic and Kevin Bross from Intel about PCI Express Gen2 and the PCI-SIG roadmap for the future of that technology. Jasmin is a key contributor to the PCI-SIG and Kevin is, well, an all around Renaissance Man. In the interview, they describe the speed and feature set improvements between Gen1 and Gen2 and explain what can be expected from Gen3 in the future. One gem I took away from the conversation is that the SIG is working on some important enhancements to Gen2 right now. These involve I/O virtualization and I/O sharing and provide some of the capability originally planned for the now defunct Advanced Switching Initiative. These will get around some of the problems of single root topologies and make high availability architectures using PCI Express much more doable.

In a related article Ian Dobson from IDT goes into detail about designing with PCI Express, how it can be used for control plane applications, and how it can improve system availability and redundancy.

In recent months we have noted with interest that AdvancedTCA is being considered for and being used in applications outside of the traditional telecom space due to its energy efficiency as measured by computing power per watt and its volumetric efficiency when compared to a rack full of 1U servers. Most of this is due to the technology's efficient power conversion architecture, and it is increasingly being regarded as "green" technology. Stefan Karapetkov from Polycom explains another "green" aspect of AdvancedTCA, which is the company's use of AdvancedTCA platforms for sophisticated remote collaboration and video conferencing tools. A major benefit of that, of course, is fewer miles driven and fewer plane trips taken, which reduces both carbon emissions and stress and headaches on the part of the traveler.

Devashish Paul from Tundra Semiconductor describes the advantages of using the RapidIO interconnect to build low-cost, low-latency wireless basestations using MicroTCA. He covers how to use the emerging PICMG AMC.4 standard to provide true 10 Gbps data transfer within this system, pointing out how RapidIO's built-in Quality of Service and traffic priority management features help achieve this speed.

Rounding out this month's editorial is an article by Herman Abel and Ian Colville of Aculab describing the design of a very flexible, DSP-based CompactPCI board for voice processing. One of the main applications for the board is voice conferencing. The trend is that businesses are looking to avoid the hassles of air travel with better remote collaboration tools. The use of CompactPCI as a platform was mandated by Aculab's customer, and it appears the technology is alive and well.

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