



Built to last

New telecoms and networking architectures are evolving fast. But are the ATCA and MicroTCA standards built to last? By **Mike Richardson**.

As telecoms and networking move towards greater levels of integration, new standards are emerging to improve modularity and efficiency, particularly with the Advanced Telecom Computing Architecture (ATCA) and MicroTCA standards.

Both specify various electromechanical aspects of implementing carrier grade equipment in different form factors across a multi vendor environment. Whilst the standards are evolving to improve implementation aspects and keep pace with technology, popularity is increasing because of the potential cost savings, increased functionality and multi vendor compatibility, while reduced development time speeds time to market.

"The ATCA specification has enabled large telecom OEMs to move away from proprietary systems towards an infrastruc-

ture based on standardised modular components that reduce system development time and costs," stated Schroff UK's technical/marketing manager, Keith Reynolds.

"Many aspects of the standards have been updated as adoption grows," explained Radisys' senior director of product line management, Venkataraman Prasannan. "The standards are, in a sense, 'living' and 'evolving' to improve implementation and keep up with technology."

Intel's telco servers marketing manager EMEA, Jeff Hewlett says industry agrees the way forward is by moving to open

Keith Reynolds (centre): "Several telecom OEMs have adopted the technology; only one still uses proprietary solutions." Other panellists include Nigel Forrester (left) and Venkataraman Prasannan (right).

standards based platforms 'with a wide choice of vendors delivering leading edge technology and performance which is only provided by ATCA today'.

Whereas ATCA is aimed at the high end, MicroTCA is more flexible, scalable and cost effective for low end telecom systems, and has potential in sectors as diverse as industrial automation and defence.

MicroTCA uses the same AMC modules as ATCA, but without the need for a carrier, these modules can be plugged directly into a backplane inside the MicroTCA system.

According to Motorola's product marketing manager, embedded communications computing, Nigel Forrester, the industry is entering a period of stability. "But there is an initiative within the PCI Industrial Computer Manufacturers Group (PICMG) to improve and standardise the ability of MicroTCA products that withstand extreme environments."

As a distributor, Acal Technology's take on evolving standards is different. "We have a good view on what the market is telling us and the interesting fact to emerge is that there is plenty of scope for evolution and diversity in the xTCA standards," noted telecoms product manager - Microsystems Division, Robert Seymour. "As MicroTCA continues to attract interest from customers beyond its original intended audience, we are seeing further





adaptation of the standard. As new applications emerge, the standard will evolve.”

But why now and what is the aim? Since its release in 2002, ATCA has gained acceptance by telecom OEMs, with some planning to base the next generation of telecom networks on it. To cover all network applications, ATCA needed a ‘smaller brother’ so MicroTCA was born.

Reynolds says two main reasons for MicroTCA are time to market and development/production costs. “These issues are key to companies that have been using proprietary solutions. Speed, performance and removing bottlenecks are goals for companies that previously designed based on cPCI and PSB platforms.”

Hewlett feels the time is right because the telecom industry has never been under so much pressure to lower costs and improve revenue per unit. “There is a requirement to quickly deploy profitable services and shorten the time to money. ATCA is the only standard that has been created solely to meet the needs of telecommunications industry.”

Seymour cites the added value of a standard on which many different market sectors can converge. “Cost will be key to MicroTCA’s success and it’s making our customers sit up and take notice.”

Although ATCA’s primary target market has always been telecoms, surely the intention was for it to be developed in such a way that other markets could use it?

Prasannan: “Both standards will find uses in other markets, whilst MicroTCA is seeing more use in medical markets as well.” Hewlett goes further: “MicroTCA will open the door to a wider array of market segments such as transport, industrial and even small office, home office.”

Market acceptance

While ‘embedded’ means different things to different people, the panel feels MicroTCA’s form factor should see acceptance in the industrial embedded market segment. Forrester again: “MicroTCA is well positioned to compete for the embedded market that recognises better quality and longer lifecycles. However, some deeply embedded applications require more specialised, smaller and lower power solutions than MicroTCA.”

What’s being done to get products to market quickly? “One big advantage of MicroTCA is that AMC modules were already specified when the spec was approved,” explained Reynolds. “Schroff had already begun to design and produce MicroTCA components, subracks and systems while the specification was being written.”

Seymour: “Our major suppliers have been alert to the opportunity and have got to market quickly with MicroTCA and AMC products. We are in the great position of offering a comprehensive product line and are seeing new products come to market almost weekly.”

It’s fair to say the standard needs to be as general purpose as possible to accommodate multiple usage models. Forrester says the challenge is keeping the ecosystem together so that products interoperate easily. “This has improved since the SCOPE Alliance based usage profiles on the PICMG specs and in the future the

CP-TA organisation is committed to providing formal interop testing.”

Distribution sees it differently – a general purpose approach is a blessing. “It makes sense for Acal to be closely involved in standards that have genuine cross industry applications; we only see opportunities,” Seymour contends. “We leave the challenges to the manufacturers!”

Are companies trying to gain a competitive advantage by tweaking MicroTCA to meet their commercial designs?

“Everybody is looking for an edge,” said Reynolds, “but rules prevent companies gaining an unfair advantage. If there is a patent on a part, it has to be announced by that company and then others can vote against its use. If it gets specified, the patent owner has to license it for a reasonable and non discriminating price.”

Hewlett says that, in the case of ATCA, a recent market study has shown the industry is strongly resisting fragmentation. “We saw this ‘tweaking’ happen with cPCI, which hampered interoperability and broader adoption of the standard. The industry learned from these mistakes and is sticking close to the standards.”

Forrester agrees: “Within established MicroTCA vendors, there is excellent ‘coopetition’ and a desire to use the existing MicroTCA standard to the full extent. The SCOPE Alliance demands better coordination between the vendors for telecom applications.”

Will the standards replace proprietary modules in sufficient volumes that drive costs to commodity levels? Reynolds says for ATCA, the answer is ‘yes’. “Several telecom OEMs have adopted the technology; only one still uses proprietary solutions. It gets more interesting with MicroTCA which will be adopted by many companies, so volumes will be even higher.”

Seymour is also upbeat: “The price projections we’ve seen ... are really exciting. Many of the applications we’ve been discussing are likely to be high volume, so costs should be driven down quickly,” he concluded. ☺

Jeff Hewlett: “ATCA is the only standard that has been created solely to meet the needs of telecommunications industry.”

