Comment

32-bit chips to lead eMPU designs

Over the next few years, the 32-bit chip will lead the way in the customer-specific, cell-based embedded microprocessor unit (eMPU) market, according to a report from In-Stat.

While design starts for the overall ASIC market are forecast to decline, partly replaced by single-chip development platforms, the use of embedded microprocessors, and in particular the use of 32-bit and 64-bit cores, will continue to grow.

Worldwide merchant market dollar consumption of customer-specific, cell-based designs, independent of complexity and/or functionality, which contain one or more blocks of embedded microprocessors, is forecast to increase from $4,657.5 million in 2003 to $8,407.6 million by 2008.

And while the US will dominate consumption of these products, with an average consumption market share of 30% over the forecast period, with Japan a close second, the Asia-Pacific region will gain the most ground, particularly for the lower microprocessor bit widths, most notably at the 8-bit and 16-bit levels, with the highest growth rate being seen at the 32-bit width processors.

Functionally, customer-specific, embedded MPU cell-based product consumption will remain dominated by digital-only designs, albeit losing ground to mixed-signal. The majority of growth, for embedded microprocessor cores in cell-based designs, will be found in the application-specific standard product market.

Colin Holland

SOFTWARE

RTI's middleware wins contract

Real-Time Innovations (RTI), has won a contract from the United Kingdom's National Air Traffic Services, Ltd. (NATS), for the use of its Network Data Distribution Service (NDDS) middleware in a mission-critical air traffic management system.

NATS is using RTI's NDDS middleware as part of its Automatic Callsign Information Distributor (ACID) system. The NDDS-based system will increase performance and provided greater control over critical system behavior.

Stan Schneider, Real-Time Innovation's chief executive officer said, "Its successful integration in only a few months demonstrates the value of commercial-off-the-shelf (COTS) middleware in creating mission-critical systems quickly and reliably."

The ACID system provides UK Radar Data Processors (RDPs) with up-to-the-minute flight data, allowing them to correlate aircraft callsign and other flight information with secondary surveillance codes returned from aircraft transponders.

The correlated information provides controllers with essential data needed to monitor and control the flow of traffic through the U.K.'s busy airspace. Antony Vaudrey, ACID's project manager, said, "RTI's product provided us with a commercially attractive solution that will improve our time-to-market and help to reduce the risk to ACID's successful deployment."

Flight data is entered into ACID from civil and military flight data processing systems (FDPs). The data's integrity and freshness are critical to the provision of UK Air Traffic Control (ATC). The real-time properties of NDDS supply ACID with the ability to rapidly distribute information updates to as many as 128 RDPs tracking as many as 4,000 flights.

An important element in the NATS decision to commit to NDDS was the middleware's proven history in other mission-critical systems. RTI's experience serving military and aerospace applications gave regulatory agencies the confidence they needed to approve the final ACID design using NDDS. The system will be deployed in the London area control centre near Southampton.

A key requirement of all ATC systems is reliability. If ACID should fail, safety precautions require that traffic be grounded or re-routed, resulting in flight delays and substantial business costs to both NATS and its customers. To meet the service availability requirement, the ACID system is configured to maintain service in the event of hardware or software failure. The NDDS middleware simplifies the messaging needed to provide that fault tolerance.

"We require a low-latency, secure, ordered and reliable point-to-point messaging service," said Roland Ellis, ACID Product Design authority. "NDDS provides us with the means to maintain numerous communication paths across processes and through processor boundaries transparently to the application through the NDDS publish-subscribe mechanism."

The publish/subscribe communications model of NDDS permits the addition or removal of system nodes without disturbing the traffic among other nodes.

This allows ACID's communications processors that handle the data coming from external systems to seamlessly switch communication to an alternate database processor without needing to pause service or require manual intervention.

LINUX

MontaVista sets up mobile program

MontaVista Software has set up a program to advance the increasing adoption of Linux within the mobile phone industry.

The Mobilinux program should encourage semiconductor, mobile software, and phone integrators to create reference architectures for handset vendors and mobile operators looking to build Linux handsets.

MontaVista says that a growing number of mobile phone vendors are transitioning from proprietary operating system platforms to Linux. The Mobilinux program will feature reference architectures that include mobile software components from leading software vendors.

These components will be ported to MontaVista's Linux operating system and delivered on semiconductor platforms.

The program has been endorsed by a number of software vendors and handset integrators including ACCESS, Aplix, ARM, Cellon International Holdings, COSMOBIC Technology, Esmertec, E28, InnoPath Software, Jaluna, Openwave, Opera, PalmSource, Pollex Mobile Software, RealNetworks, SKY MobileMedia, Teleca, Texas Instruments, and TTPCom.

Jim Ready, CEO of MontaVista Software, said, "Our handset customers view Linux as a strategic platform enabling them to differentiate their phones and meet increasingly complex operator specifications. The Mobilinux program creates an open framework that helps solve the challenge of integrating disparate hardware and software components from a diverse group of vendors. "