

PRESS RELEASE

# Enea Delivers Complete Software Package for Freescale Base Station Reference Design

# Enea offering spans multicore CPUs and DSPs with uniform software architecture speeding development and deployment

**STOCKHOLM, Sweden, 22 June, 2010** – Enea (NASDAQ OMX Nordic:ENEA) today announced that it is delivering a complete software package for a recently released Freescale AdvancedMC<sup>™</sup> (AMC) base station reference design. The reference design features a powerful multicore processing package based on Freescale's MSC8156 DSP and QorIQ<sup>™</sup> P2020 technologies. As the only company with a software solution that spans from DSPs to multicore CPUs, Enea is uniquely qualified to help developers of advanced base stations harness the power of this new integrated board enabling rapid development and deployment.

Enea's offering includes the Enea OSE® Multicore Edition for CPUs; the DSP-optimized version of OSE – Enea OSE®ck; Enea® dSPEED, a suite of management, debug and error handling services for multicore DSPs; Enea® Hypervisor, Enea® LINX, a scalable interprocess communications (IPC) layer and Enea® Optima Eclipse based tools for developing, debugging and optimizing multicore systems. All Enea technology is based on a consistent software architecture and the same easy to use, but powerful message passing programming model. This accelerates development, integration and debugging of highly reliable and performance critical applications, resulting in clear competitive advantage for telecom equipment manufacturers.

Freescale's QorlQ P2020 processor and MSC8156 AMC reference design provides a compelling combination of StarCore® and Power Architecture® technologies and multi-protocol acceleration engines in a single-width AMC form factor to provide a comprehensive Layer 1, 2 and 3 baseband processing platform. The offering allows OEMs to speed time to market and provide a smooth path to advanced wireless standards.

"With 3G reaching widespread deployment and coverage and 4G on the rise, wireless base station manufacturers are demanding integrated hardware/software reference designs for applications ranging from proof of concept to field deployment to continue the momentum," said Mathias Båth, senior vice president of marketing at Enea. "This new Freescale AMC fits the requirement profile with advanced StarCore and Power Architecture® multicore processing, multiprotocol acceleration engines and now a complete software platform to accelerate development and speed time to market."



"Enea's scalable software architecture allows our mutual customers to use a single transparent programming model across both CPUs and DSPs, and this is a real advantage for Freescale and its customers," said Scott Aylor, general manager of DSP Products for Freescale's Networking and Multimedia Group. "Enea operating systems have been proven in hundreds of thousands of base stations from leading tier 1 vendors, and this expertise offers our joint customers tremendous advantages."

The Enea base station reference platform solution includes:

#### Enea OSE Multicore Edition

Deployed in approximately half of the world's 3G base stations, Enea OSE is a modular, highperformance, full-featured, real-time operating system optimized for complex multicore systems requiring the utmost in availability and reliability. To take advantage of the latest multicore processors, Enea OSE is configured with a unique and innovative kernel design that combines the advantages of both traditional Asymmetric Multiprocessing (AMP) and Symmetric Multiprocessing (SMP) while avoiding the disadvantages inherent in both programming models.

#### Enea OSEck

Enea OSEck (OSE Compact Kernel) is a DSP-optimized version of Enea's full-featured Enea OSE RTOS. Occupying as little as 8 kbytes of memory, while delivering fully-preemptive, eventdriven real-time response, OSEck features a built-in message passing architecture, error detection, and handling enabling the user to write compact, efficient distributed applications. Enea OSEck is one of the most widely used DSP operating systems with over 100 million runtime units each year.

#### Enea dSPEED

Enea dSPEED is a comprehensive, flexible, DSP-optimized software management and debug platform that speeds development and simplifies life-cycle management for "user plane" applications targeting one or more DSPs, including multicore DSPs. Built atop Enea's OSEck RTOS and LINX interprocess communications foundation, this integrated management solution provides fault detection, DSP core isolation, recovery, coordinated restart, and notification features that enable DSP failures to be contained and repaired - limiting packet loss and network degradation.

#### **Enea Hypervisor**

Enea Hypervisor implements multiple high performance computing environments on top of multicore processors. It is based on OSE micro kernel technology and runs Enea OSE applications at native processor speeds without compromising any real-time critical properties, and takes as guests Linux Operating System and optionally semiconductor specific executive environments for bare-metal speed packet processing. This implementation is ideal for developers who want to take advantage of the proven power, speed and reliability of OSE, while also utilizing the vast ecosystem of third party software available on Linux.



#### Enea LINX

LINX IPC services provide the system wide framework for establishing transparent message based communications between application processes running on multiple cores. Utilizing highperformance Connection Managers LINX messages can be carried zero-copy over shared memory or over interconnects such as Serial RapidIO or Ethernet, greatly simplifying distributed design, enabling applications running on any number of cores in a system to interact as if they were running on a single core. This transparency also enhances scalability, enabling designers to add new nodes with minimal impact on existing application code.

#### Enea Optima

The Enea Optima tool suite is an Eclipse-based integrated development environment targeting the Enea OSE, Enea OSEck and Linux. Utilizing the open source Eclipse Platform and C/C++ development tools technology, Optima provides advanced system level browsing, debugging, post-mortem debugging, profiling and analysis tools that greatly simplify the debugging and optimization of large-scale distributed applications spanning multiple processor cores.

## For more information

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### About Enea

Enea is a global software and services company focused on solutions for communication-driven products. With 40 years of experience Enea is a world leader in the development of software platforms with extreme demands on high-availability and performance. Enea's expertise in realtime operating systems and high availability middleware shortens development cycles, brings down product costs and increases system reliability. Enea's vertical solutions cover telecom



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