

Embedded - BSP (Embedded Board Support Package)

AREA OF COMPETENCES: Embedded Systems

INDUSTRY: Telco

CHALLENGE

ENEAA

In its positioning efforts, Enea aims to be at the fore-front of the technological challenges. Our client has strategic partnerships with major players in semiconductor business for the enablement of their hardware platforms as well as for providing complete (vertical), state of the art solutions to customers.

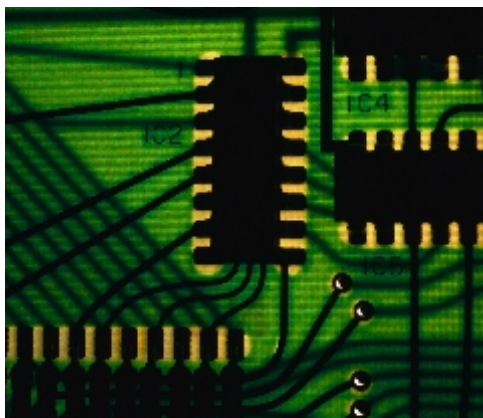
One of the major challenges in this business is to provide the much needed customization of hardware and software to best suit customer needs in terms of features, cost and performance. That is the reason for which supporting a wide range of hardware platforms in different industries is a big part of OSE success.

One of the imperatives was to port the client's proprietary RTOS – OSE on the most modern boards available on the market. The OSE RTOS is a compact, fully pre-emptive high-availability multi-processor RTOS designed for distributed, high-performance, multi-channel, multi-function communications applications.

Our engineers were required to port the OSE on the Lite5200 platform provided by Freescale Semiconductor Inc (formerly known as Motorola Semiconductor Product Sector). This activity included both updating existing drivers and creating new ones to enable usage of the hardware features.

SOLUTION

IP Devel developed the Board Support Package (BSP) for the OSE and validated it with the test suites provided by the client. The Freescale Lite5200 Board is a compact subset of the Total5200 Development



Platform for the evaluation and creation of systems based on the high performance, low-power, low-cost 400 MHz MPC5200 embedded processor containing a PowerPC® core.

The board makes the Ethernet, USB, PCI, ATA, serial, CAN, and GPIO resources of the MPC5200 readily available with complete SDRAM and Flash memory support. The I2C, I2S, SPI, J1850, AC97, and secondary port facilities, as well as all other resources of the MPC5200, are all accessible via an on-board connector and user-supplied transceivers. Various combinations of I/O may be traded off, depending on the user's specific needs since nearly all pins of the MPC5200 are re-programmable.

The porting of the OSE was accomplished using various programming languages: C, Assembler – and various additional tools – GCC, Code Warrior, and JTAG. The following drivers have been ported: UART, CAN, Ethernet, IDE/ATA. At the same time several features have been created especially for this board: PCI, Bridge, Timer and PIC.

As main benefits, Enea was able to focus on other mainstream proprietary RTOS development activities as the porting and additional utility development was handled by IP Devel's team. The fixed priced model on this project helped customer on budget optimizations while benefiting from our experienced engineering skills on Embedded Systems.

ABOUT OUR CLIENT

Enea is a global software company, a telecommunications specialist with a real-time operating system that puts it at the cutting edge of technology. The company's applications broad based growth across key verticals like datacom/telecom, wireless devices, avionics and defense.