

SND presents new RTOS for Industrial Automation Components:

4NetOS supports SPEAr™ Net Processor with many optimised Network Features

Jülich, October 2005 – A brand new real-time kernel is the main feature of Smart Network Devices' embedded real-time operating system 4NetOS for ARM-based processor architectures. It will be presented to the public for the first time at the automation fair SPS/IPC/Drives in Nuremberg. The new RTOS requires, depending on the chosen features, only 100-300 Kbyte of memory space and clearly targets the automation industry with real-time Ethernet protocols such as Ethernet Powerlink, EtherNet/IP and PROFINet as these can not be run on popular OS software such as Linux or eCos due to the lack of real-time capabilities. With its unique capabilities, 4NetOS exploits the network features of the new ARM-based SPEAr™ Net processor from STMicroelectronics.

With 4NetOS, Smart Network Devices sets new standards with respect to performance and flexibility. The new real-time kernel concept of 4NetOS, presented at the automation fair SPS/IPC/Drives on the STMicroelectronics stand no. 208 in hall 6, enables the user to adapt his application to different interface requirements with minimum time and effort. The main parts of the kernel, such as the task scheduler and the memory manager, have been written in C language, and other more CPU-specific parts, such as the boot-up procedure, the task context switch and the exception handling have been optimised using Assembler language. As 4NetOS is designed for system on chip architectures, device drivers for different on-chip peripherals can easily be adapted.

The new SPEAr™ Net CPU has an ARM720T core running with 48 MHz and features on chip peripherals such as 10/100 Ethernet, UART, I²C, IEEE1284, USB host, RTC and an 8Kbyte shared memory area.

4NetOS supports the different SPEAr Net chip functions with a set of dedicated device drivers. This includes a special device driver for real-time Ethernet targeting industrial automation applications, as here response times need to be very fast and timer driven actions very accurate in order to be able to synchronise on the signal of a master device on the same network. With running 4NetOS on an 48 MHz ARM7 chip for this kind of application it is shown, that not the CPU clock is the main reason for a good performance, but an intelligent driver software.

With respect to protocols, TCP, UDP, ARP, ICMP, DHCP, SMTP, FTP, HTTP and PPP with both client and server versions of each are offered. A file system manager including support for memory cards, a graphics library, a qualified Bluetooth V1.2 host protocol stack with up to 7 active channels and a Java Virtual Machine (J2ME CLDC) complete the set of features. On real-time Ethernet level customers can choose from Ethernet Powerlink V1 or V2.

EtherNet/IP and PROFINet support will follow in the near future.

For an easy and hassle-free start with the SPEAr NET processor with ARM720T core, SND offers customers the OEM hardware module StarTarget7 running 4NetOS. This tiny board of just 3x3 cms in size is optimised for industrial applications as it integrates an Ethernet hub and thus enables simple and efficient line topologies. Furthermore 2 Mbytes of flash memory as well as 8 Mbytes of SDRAM memory offer enough room for software extensions and application code, given the fact that the operating system 4NetOS itself only requires 100-300 Kbytes of it. The board is specified with the extended temperature range of - 40°C to +85°C.

To complete the offer SND provides a comfortable development system, which apart from the StarTarget7 hardware contains all common development tools and an evaluation version of 4NetOS including all available software extensions. The kit will be available from Q1/2006 for 990,- Euro in the Base Edition and 2.650,- Euro in the Professional Edition. The latter contains all drivers in source code and the schematics of the StarTarget7 board.

+++

Smart Network Devices GmbH

Smart Network Devices GmbH (SND), established in 1999 in Neuss and now located in Jülich, has developed an innovative technique of their own, making it possible to handle complex communication requirements in wired and wireless networks on one single chip (System on Single Chip). With products such as the network operating system HyNetOS® dedicated to the Hyperstone processor architecture, the Micro WebTarget® board family, the Bluetooth board Micro BlueTarget® as well as various software protocol extensions for HyNetOS®, Smart Network Devices became one of the leading technology suppliers worldwide in this area of the market. Completed by the embedded network operating system 4NetOS® for ARM based architectures Smart Network Devices today offers powerful and platform independent "Embedded Networking" solutions in fields such as industrial automation, facility management, wireless infrastructure etc. For further information please go to www.smartnd.com.

SPEAR is a pending trademark application of STMicroelectronics Group

For further editorial information kindly contact:

Werner W. Wiesmeier
3W Media & Marketing Consulting
Preisingerlohweg 2
D-85368 Moosburg
Tel. +49 (87 61) 75 92 03
Fax. +49 (87 61) 75 92 01
Email: werner.wiesmeier@online.de

Peter Duchemin
Smart Network Devices GmbH
Karl-Heinz-Beckurts-Str. 13
D-52428 Jülich
Tel. +49 (24 61) 690 620
Fax. +49 (24 61) 690 621
Email: pduchemin@smartnd.com