

OS-9 Goes Wireless

Wireless OS-9, a version of its industry-standard OS-9 Real-Time Operating System, designed specifically for the growing wireless communications market, has been launched by Microware. This market comprises everything from pagers, cellular phones and personal digital assistants to remotely monitored industrial control devices.

Microware has complemented the availability of Wireless OS-9 with a team dedicated to knowing this vertical market inside and out. The company's collective expertise, combined with the technology driving Wireless OS-9, can help customers design feature-rich wireless products and bring them to market quickly.

Wireless OS-9 enhances the capabilities of the base OS-9 operating system by adding new power management, user interface and communications features developed specifically to meet the unique requirements of wireless communications devices.

For example, many wireless devices have low memory capacity, unique power requirements and small, LCD user interfaces. Wireless OS-9 can identify power parameters or network characteristics and communicate them to other components within the device, ensuring that the device responds correctly to existing conditions.

Wireless OS-9 also features a set of tools that lets manufacturers of wireless devices create an appropriate user interface for these appliances. Some may require only limited low resolution black and white graphics and a few input buttons. Others require high-resolution colour windowing and pen-based character recognition.

Microware's Multimedia Application User Interface (MAUI) provides multiple levels of Application Programming Interfaces (APIs) for greater flexibility to designers of wireless devices. MAUI supports a number of input devices such as keyboards, touch screens and pens, as well as output devices such as audio and visual displays.

Microware Opens ARMs to New Platforms




At the end of 1996 Microware announced that OS-9 was to be ported to the ARM microprocessor family. The new software, which is due in early summer 97, will allow developers to use OS-9 for set-top box, information appliance and intelligent personal communications device applications. The port will include support for ARM's "Thumb™" code compression extension, making it ideal for deeply-embedded, cost-sensitive applications such as PDAs, pagers and smart phones.

The availability of OS-9 on the ARM architecture will further enable low-cost portable products using Thumb-aware ARM cores. In addition, Microware's strong software support for the information appliance market fits extremely well with high-performance ARM systems-on-a-chip such as the ARM7500FE, and integrated ARM810 and StrongARM™ devices.

The availability of OS-9 Operating System running on Cirrus Logic's CL-PS7110 (based on ARM7100 architecture) device complements Cirrus Logic's product offering of PS7110 and a complete design kit that includes the reference board and its design database. With Microware's OS offering, OEMs can introduce their value-added solution much faster to the market.

ARM designs, licenses and markets high-performance, low-cost, low-power consumption 32-bit RISC processors, peripherals and development tools for embedded control, consumer, multimedia, DSP and portable applications. ARM semiconductor partners include: AKM, Alcatel Mietec, Atmel ES2, Cirrus, Digital, GEC Plessey Semiconductors, LG Semicon, NEC, Oki, Samsung, Sharp, Symbios Logic, TI, VLSI, and Yamaha.



Digital Broadcast Environment Pak for DAVID

The Microware Digital Broadcast Environment Pak v1.0 for DAVID is now available. The package, targeted at companies needing to comply with Digital Video Broadcast (DVB) standards, is offered as an extension to those who have signed a DAVID or DAVIDLite Installation Pak license agreement.

The inherent modularity and compactness of Microware's DAVID system software allows drop-in support for DVB and the flexibility to provide future support for other standard bodies in Europe, Asia and the United States. The Digital Broadcast Environment Pak for DAVID:

- Provides a DVB-compliant solution for DAVID-based digital broadcast receivers.
- Accelerates time-to-market with minimal customisation.
- Is optimised for restricted memory environments.
- Was developed under ISO 9001 quality guidelines.
- Is based on OS-9, Microware's compact, reliable embedded operating system for consumer electronics.

Microware to Power 1 Million STBs

Ferrotec Ltd, the Dublin-based electronics group, has chosen Microware's OS-9 DAVID as the operating system for an interactive Digital Set Top Box (STB) roll-out. The STBs will provide full, interactive video applications, including video on demand, Internet Access, including email, home shopping and home banking. A roll-out of up to 1 million boxes is expected over the next two years.

Microware's OS-9 DAVID was chosen by Ferrotec to run on its Motorola Power PC platform because of the software's efficiency, modularity, security and functionality. "OS-9 DAVID is really the only choice for Set Top Boxes," said John Ferrie, Chairman of Ferrotec. "The software is designed for exactly this type of application. It supports full audio and video, has ready-built comms modules, and can be extended to support other functionality such as IrDA for Infra-red communications."

OS-9 DAVID lies at the heart of the majority of fully interactive television (ITV) trials and roll-outs across the world. It really is becoming the standard. "The Ferrotec deal is one of the largest STB roll-outs in the world, and we are very excited about its future beyond the first two years", said Trefor Hooker, European Marketing Manager at Microware.

DAVID (Digital Audio/Video Interactive Decoder) is an open operating system software standard for interactive digital television. DAVID is designed to enable content and network providers to author an application once, store it on a variety of servers, send it across different types of broadband networks and run it on DAVID-based digital network devices. DAVID can be used in telephone, cable television and wireless networks and is licensed by manufacturers for use in early digital television trials and deployments, in Europe, North America and the Far East.



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Microware and Hitachi Team Up

Microware and Hitachi Ltd. have announced a port of OS-9 DAVID to Hitachi's SH-3 microprocessor, the 3rd generation of the 32-bit SuperH RISC engine family (SH family). The port is in response to increased market demand for more comprehensive, easy-to-use development environments for multimedia products including set-top boxes, DVD players and portable communication devices. The combination of the high-speed and low-power-consumption SH family with the compact, robust OS-9 DAVID Operating System provides a comprehensive platform that reduces time-to-market for a range of multimedia products.

Hitachi's expertise in supporting consumer products with SH complements Microware's OS-9 DAVID technology in interactive digital television devices. By supporting the SH family, Microware expands its opportunities for entry into other emerging markets, such as wireless personal communication devices.

Hitachi's General Manager of Technology Marketing Operations, Kazuo Minorikawa, said, "We are pleased to be working closely with Microware to bring these integrated tools to the SH-3. The collaboration with Microware, a leader in digital television technology, will allow us to further expand SH's acceptance in the multimedia market."

Microware and Hitachi will initially release OS-9 DAVID support for the SH-3, an ideal choice for multimedia applications. Support for other SH family microprocessors is planned in the future.

The strength of the SH family in the multimedia market and further penetration of the related wireless/portable market is facilitated by Microware's licensing of the Java programming environment and HotJava World Wide Web browser from Sun Microsystems.

position not only benefits Microware, but also the partner companies and ultimately the consumers using these devices and services because of the comfort level it affords.

"Microware's OS-9 packages, together with their Java support, enable flexibility and opportunity for a supplier to answer the demands of the wireless market now and in the future," said Billy Moon, manager of new concepts at Ericsson Inc. "The flexibility and modularity of OS-9 are appealing because it makes it possible to add features, such as Java-based applications or expanded Internet services, as they become available. We believe that Java support will be crucial to the future of the Internet and mobile communications."



See us at ESS 97

Microware will be out in force at The Embedded Systems Show this year. The event, held at Olympia 2 on May 21-22, promises to be the biggest ever, and Microware's platform for a host of product announcements. Visitors to the show should make their way to Stand 61 - close to the entrance of the main hall.

Ericsson Chooses Microware

Ericsson Inc., the world's leading provider of telecommunications equipment, has chosen Microware's OS-9 real-time operating system for use in its future products and services for the mobile market. Based on subscribers served, Ericsson is one of the world's leading wireless suppliers.

The deal further illustrates Microware's strong position in the intelligent world. The OS-9 real-time operating system is the choice of major players — such as Ericsson, Uniden and Motorola — in the personal mobile communications market. This strong

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Third Party Products

European News Update would like to regularly update you on Third Party products that are both complementary and compatible with Microware's. The following information is supplied in good faith, but Microware can provide no guarantee on the suitability of any Third Party product.

If you have any Third Party Products you would like included in future issues, please email treforh@microware.co.uk

1. PPP for ISP

Microware Systems will be offering full PPP support via its latest Networking File Manager, SPF. For those customers requiring PPP Support via ISP, a Third Party product is available.

The Point-to-Point Protocol (PPP) provides a method for transmitting datagrams over serial point-to-point links. PPP is composed of three parts: a method for encapsulating datagrams over serial links, an extensible Link Control Protocol (LCP), and a family of Network Control Protocols (NCP) for establishing and configuring different network-layer protocols.

The encapsulation scheme is provided by 2 user state process's pppd & pptx. These provide the basic LCP, authentication support, and an NCP for establishing and configuring the Internet Protocol (IP) In addition a new ISP driver feeds and receives IP data from the user state threads.

The PPP daemon (pppd), which negotiates with the peer to establish the link is compliant with the guidelines defined in RFCs 1548, 1549, 1332, 1334 & 1717. The package includes support for authentication, so you can control which other systems may make a PPP connection and what IP addresses they may use.

The package provides dial-on-demand access to external networks. It also can function as a dial-in server with support for multiple user accounts.

A comprehensive "firewall" filter exists to restrict access to and from the external network. The firewall can be reconfigured "online" to suit sudden changes in access requirements. It can also be used to control the dial-on-demand functionality to particular services.

The package also includes an IP packet aliasing capability. This gives full access to the PPP connected network from any machine on a local LAN. External connections to particular services can be directed to any machine on the LAN as an alternative to the PPP gateway machine.

PPP requires ISP 1.4 and OSK 2.4 or greater. It uses a standard SCF driver for connection to it's serial-link.

Comprehensive logging of network connections and modem activity is provided.

Contact UAC Technology on +44 (0)191 456 5970 for more details.

2. **DataVision™** is an embedded Database system for client/server, distributed and embedded applications. It combines the benefits of an embedded database (extremely fast response times, efficient memory utilization, flexible schema, low level access) with the requirements for client/server applications (modular design and scalability). DataVision is provided as a Source Kit. C or C++ programs simply make library calls to Datavision's Library Functions.

Contact BDQ Executive Consulting on +44 (0)1344 21161 for more details.

3. **Motorola's Lexicus Division** has announced that it has ported both its QuickPrint™ handwriting recognition software and its CrystalTalk™ speech recognition software to OS-9. QuickPrint enables users to enter text into small handheld devices using a stylus.

CrystalTalk was designed specifically for noisy environments, such as driving a car with the windows open. Contact Motorola on +1 415 462 6800 for more details.

IBM Licenses OS-9

IBM has licensed the OS-9 real-time operating system from Microware for potential use in technology aimed at OEMs for production of a variety of wireless and wired Internet- and Intranet-access devices. IBM demonstrated its OS-9 capabilities at COMDEX Fall 1996 in Las Vegas.

"Being chosen as one of the potential operating systems in IBM's OEM network computer technology demonstrates that Microware has a proven and reliable operating system in OS-9," said Ken Kaplan, president and CEO of Microware.

Training Schedule

Microware's training courses are available in the UK throughout the year. The 4-day course is split into three modules, which can be booked individually as follows:- Day 1 Starter; Day 2 Intermediate; Days 3&4 Advanced. The four-day sessions start on the following dates:-

Manchester May 19th

Burnham June 16th

Manchester July 7th

Burnham July 28th

Burnham September 1st

Custom and on-site courses are available across Europe to organisations with extensive training requirements.

Are you Up to Date?

The latest versions of our products are:

FasTrak for Windows C and C++	2.1.1
FasTrak for UNIX	2.0.4
OS-9 Toolkit	1.3.2
ISP/NFSC	2.1
CPU-32, 16 and 32 bit Licence	3.0.3

Please contact Microware if you would like to order any of the above.

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