

WIRELESS INDUSTRY AND SUN DELIVER MIDP 2.0 - NEXT-GENERATION JAVA TECHNOLOGIES FOR ENHANCED WIRELESS DATA SERVICES

Over 50 million Java-technology enabled handsets shipped & deployed by 20+ carriers worldwide

HONG KONG -- December 2, 2002 -- ITU Telecom Asia - Sun Microsystems Inc. today announced the completion of the Mobile Information Device Profile (MIDP 2.0) standard and the availability of the final MIDP 2.0 specification, reference implementation, compatibility test suite, and beta version of the J2ME Wireless Toolkit 2.0. Developed by more than 50 wireless industry leaders worldwide to extend the base collection of Java technologies for mobile devices, MIDP 2.0 supports new and enhanced gaming, graphics, video, audio, security, and many other features for mobile devices such as cell phones and personal digital assistants.

"MIDP 2.0 is an important milestone in the evolution of mobile devices for both consumer-centric content vendors and corporations that are interested in developing and deploying secure end-to-end wireless enterprise services," said Alan Brenner, vice president, Consumer and Mobile Systems Group, Sun Microsystems." This will directly translate into new revenue opportunities for industry participants and give further impetus to Java's growth as a de facto standard for wireless data services."

"As specification lead for the MIDP development process, Motorola has been happy to collaborate with other industry leaders to bring Java technology for mobile devices to maturity," said Philip Gilchrist, vice president of Global Standards and Technical Asset Management, Motorola's Personal Communications Sector. "Motorola believes MIDP 2.0 enhances Java's position as the platform for the development of exciting and differentiating services and applications for the mobile industry."

"MIDP 2.0 marks an important milestone for the mobile industry. The new specification enables developers to take better advantage of the various features of mobile devices, hence making it possible to build even more exciting and comprehensive Java applications for the mobile environment. As a strong supporter of standards based solutions, Nokia is committed to Java technology and we intend to start deploying MIDP 2.0 in our tools and product releases during 2003. We also believe that MIDP 2.0 will be an attractive standardized solution to meet the requirements of the entire mobile industry," said Jouko Häyrynen, vice president, Forum Nokia, Nokia Mobile Software.

Wireless Industry standardizes on Java technology for wireless data services

More than 50 million Java-technology enabled handsets have already been shipped worldwide by major carriers, representing all the main wireless network systems, including GSM/GPRS, CDMA , PDC, iDEN, and W-CDMA. Twenty of the world's leading carriers currently offer 29 deployments of Java-technology based mobile services in Asia, Europe and the United States. More than 30 additional deployments are planned or in trial.

In Asia, the deployment of Java technology wireless data services is already a proven success in Hong Kong (with Hong Kong CSL, Hutchison, New World Mobility, Noodle, Peoples Telephone, SmarTone, and Sunday); in Japan (with NTT DoCoMo, KDDI and Vodafone/J-Phone); in Korea (with LG Telecom); in Singapore (with Starhub, SingTel, and M1); and in Taiwan (with Far Eastone and Chung Hwa Telecom). European & US carriers, including Vodafone, T-Mobile, AT&T Wireless, Sprint PCS, Nextel, and many others have been monetizing their wireless data network investment with Java technologies.

In November 2002, China Unicom and Sun Microsystems China signed a memorandum of understanding under which the partners will jointly develop end-to-end Java technology wireless data infrastructure and value-added applications in order to enhance services for end users in China.

New Features in MIDP 2.0

With the availability of MIDP 2.0, manufacturers and service providers will be able to quickly and cost-effectively deliver increased functionality, more robust applications and a better user experience to mobile devices using the [Java 2 Platform, Micro Edition \(J2ME\) platform](#). Providing the foundation for highly graphical and intuitive mobile applications, MIDP 2.0 now brings the following new features:

Enhanced user interface: MIDP 2.0 improves the overall end-user experience with several enhancements to that make applications more interactive and easier to use. It also provides greater extensibility and a more flexible layout for increased application portability across a wide range of devices with differing screen sizes.

Media support: MIDP 2.0 allows developers to leverage the full audio capabilities of each device, adding audio such as tones, tone sequences and WAV files to MIDP applications using a standard platform.

Game support: MIDP 2.0 adds a Game API that provides a standard foundation for building rich games, taking advantage of native device graphics capabilities to simplify development and provide greater control over graphics and performance.

Expanded connectivity: MIDP 2.0 adds support for leading connectivity standards beyond HTTP, such as HTTPS, datagram, sockets, server sockets, and serial port communication, providing applications different way to exchange data with back-end services.

Push architecture: MIDP 2.0 includes a server push model whereby MIDlets can be registered to be activated when a device receives information from a server. This enables developers to leverage the event-driven capabilities of devices and carrier networks, and easily include alerts, messaging and broadcasts using a standard approach in MIDP applications. Mobile applications enhanced by this technology will include news updates, stock trading, online auctions, and real-time messaging.

Over-The-Air (OTA) Provisioning: To ensure a standard approach to MIDP application deployment that works across a range of mobile devices, OTA provisioning is now required as part of the MIDP specification. It defines how MIDlet suites are discovered, installed, updated and removed on mobile devices and enables a service provider to identify which MIDlet suites will work on a given device, and obtain status reports from the device following installation, updates or removal.

End-to-end security: MIDP 2.0 adds a robust end-to-end security model, built on open standards, that protects the network, applications and mobile device. It supports HTTPS and leverages existing standards such as SSL and WTLS to enable the transmission of encrypted data.

Sample applications leveraging the new features introduced in MIDP 2.0 could be a Karaoke game streaming audio files over a wireless network, multi-player arcade games, a supply chain management (SCM) accessing corporate data over a secure wireless connection, traffic alerts launching a related street navigation application, and more.

MIDP Technology

MIDP is a set of Java[®] APIs that, together with the Connected Limited Device Configuration (CLDC), provides a complete J2ME application runtime environment to support the majority of low-cost mobile information devices in use today, including mobile phones, digital assistants, and two-way pagers. It provides Java developers the opportunity to leverage their skills onto a wide variety of mobile devices, taking into account the individual capabilities and limitations of each.

For more information on MIDP 2.0:

J2ME: <http://java.sun.com/j2me>

MIDP: <http://java.sun.com/products/midp>

MIDP datasheet: <http://java.sun.com/products/midp/midp-ds.pdf>

About Sun Microsystems, Inc.

Since its inception in 1982, a singular vision -- "The Network Is The Computer[tm]" -- has propelled Sun Microsystems, Inc. (Nasdaq: SUNW) to its position as a leading provider of industrial-strength hardware, software and services that make the Net work. Sun can be found in more than 100 countries and on the World Wide Web at <http://sun.com>

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