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◣ RESOURCE PAGES

A Guide to Online Information About:

Wireless Application Protocol (WAP)

by Bob Paddock

"Wireless Application Protocol (WAP) is an open, global specification that empowers mobile users with wireless devices to easily access and interact with information and services instantly."

WAP has become the de facto worldwide standard for providing Internet communications, advanced telephony services on digital mobile phones, and pagers, other wireless terminals.

A large number of device manufacturers (Nokia, Ericsson, Motorola and so on) and software developers (IBM, Microsoft, Oracle) have agreed on one common standard for small devices to communicate.

I don't know about your embedded designs, but mine always have "limited memory and computational resources" in the name of low cost and size. So maybe WAP and WML have more applications than its designers originally envisioned.

Before I get to this month's Resource Page's links, I want to note something. Normally I like to spruce up the Resource Pages with graphics. However, many of the related web sites seem more interested in warning people not to use their trademarked material (with appropriate credit, of course), without written permission, than describing their technologies. Doesn't it seem odd for the organizations that

push wireless Internet connectivity to require written paper transactions? Even the FDA allows electronic signatures these days.

For more information reguarding electronics signatures, check out American Bar Association Section of Science and Technology Information Security Committee's Digital Signature Guidelines Tutorial or the AMERICAN BANKERS ASSOCIATION's CERTIFICATION AUTHORITY LIABILITY ANALYSIS.

A good place to start understanding the Wireless Application Protocol specifications is the WAP Forum site. You can download the specifications after you sign a long WAP Copyright License agreement web forum.

The XML Cover Pages "WAP Wireless Markup Language Specification (WML)".

> "WML (Wireless Markup Language) is a markup language based on XML, and is intended for use in specifying content and user interface for narrowband devices, including cellular phones and pagers. WML is designed with the constraints of small narrowband devices in mind. These constraints include: 1) Small display and limited user input facilities; 2) Narrowband network connection; 3) Limited memory and computational resources."

The article also contains a excellent bilibogrphy of WAP and WML items.

Netple (an abbreviation of InterNET peoPLE) hosts an excellent WAP FAQ. Or maybe you want check The Independent Official WAP/WML FAQ. Ilico Limited sums up the key elements of the WAP specification.
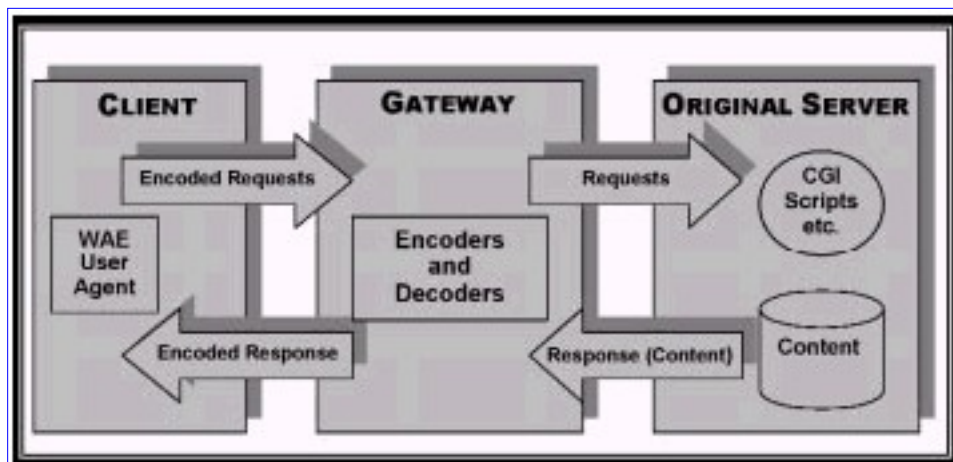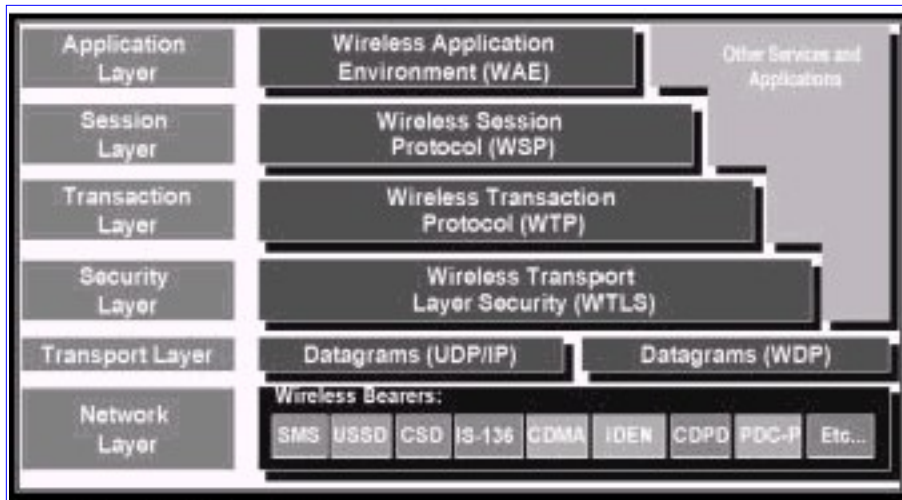

Figure 1: The WAP Programming Model

Figure 2: The WAP Protocol Stack

Wappy at WAP.NET answers many questions about WAP. WAP.NET is your comprehensive for resource the WAP on the Internet.

This site by Ericsson addresses the needs of third party application developers and content providers.

Ericsson also has the WAP-IDE (Integrated Developer'sEnvironment) for WAP Developers. It can be downloaded free from http://mobileinternet.ericsson.se/.

Ericsson Developers' Zone is the place to visit for product, service and application developers, and content providers.

Forum Nokia is targeted at third parties who develop applications and services for Nokia platforms including Nokia WAP phones, Nokia communicators, and the Nokia card phone.

In the Wireless Data Library you will find documents related to wireless data. This library offers information for people interested in the different technologies that enable data transmissions in mobile networks.

Mobile Dispatches is an ongoing monthly series of papers about value-added services on mobile phone networks.

It covers some of the WAP development issues, such as several non-standardized or unresolved issues relating to WAP.

Gelon.net's collection of WAP resources is the next

place you should stop, on this site you will find:

- links to WAP services
- wapalizer— WAP browser emulator
- forums
- available WAP devices
- developer zone

The most interesting things I found were the Wapalizer that lets you type in the URL for the WAP page you want to view, and the phone emulator that lets you see how a WAP web page would appear on a WAP compatible device. Is your web site ready to be viewed on the up and coming generation of terminals? These require a browser compatible with JaveScript 1.2, and some only work with Internet Explorer.

Palo Pacific Technology Pty Ltd. offers WAP tutorials and news, among several other features.

The site Internet Alchemy states several interesting things about WAP, particularly about the WAP patent claim by Geoworks, concerning aspects of WAP and WML. Geoworks has a page devoted to the claim.

OpenWAP is the open source project for WAP. The OpenWAP Project is committed to the collaborative development of open source WAP frameworks.   Applications are available for use by both commercial and private users.

Kannel is an open source WAP and SMS gateway. The WAP protocols are translated to HTTP by a WAP gateway.

It attempts to provide this essential part of the WAP infrastructure freely to everyone so the market potential for WAP services, both from wireless operators and specialized service providers, will be realized as efficiently as possible.

In the fall 1999 term, Thomas Kunz taught a graduate course about mobile computing (as a ConGESE course at IBM, Toronto). This course was also offered as a ConGESE course in the summer of 1999 at Nortel, Ottawa. A similar course is offered as 94.581 in the winter 2000 term at Carleton. He covers some interesting material like TCP over Wireless Links.

WapWarp is a search engine for WAP sites and resources and the wap-dev mailing list.

So why do you need a separate search engine for WAP sites?

> "Well, WAP pages are different from HTML pages and will only display properly in a browser that can read them. To stop confusion, we provided separate links for web sites about WAP or are a companion to a WAP site, and the WAP sites themselves. If you use a WAP enabled browser to view the site, you will only get the links to the WAP sites. While a standard web browser will get a link to the web site (if there is one) and the link to the WAP site presented in a format that allows you to tap the link into your phone or cut and paste into a WAP browser."

"WML or XML?: How do YOU supply content for the wireless market?" explains why XML is the answer to avoid interoperablity issues.

In a past Resource Page, I covered XML, the World Wide Web Consortium concerns the combination of XML and WAP:

http://www.w3.org/

WAP is a result of continuous work to define an industry-wide specification for developing applications that operate over wireless communication networks. The scope of the WAP forum is to define a set of specifications to be used by service applications. The wireless market is growing quickly, reaching new customers, and adding new services. To enable operators and manufacturers to meet the challenges of advanced services, differentiation, and fast/flexible service creation, WAP defines a set of protocols in transport, session and application layers. For additional information about the WAP architecture, refer to "Wireless Application Protocol Architecture Specification" (WAP).

This specification defines a compact binary representation of the Extensible Markup Language (XML). The binary XML content format is designed to reduce the transmission size of XML documents, allowing more effective use of XML data on narrowband communication channels. Refer to the (WML) specification for an example of the binary XML content format.

In partnership with Nokia, OANDA launched the world's first WAP currency converter.

[Mobic.com](#) bills itself as "the place to find WAP experts and WAP Programmers". It has many links and news items related to WAP.

[WAPLite](#) connects WAP compatible mobile phones to Internet and Intranet based applications and content.
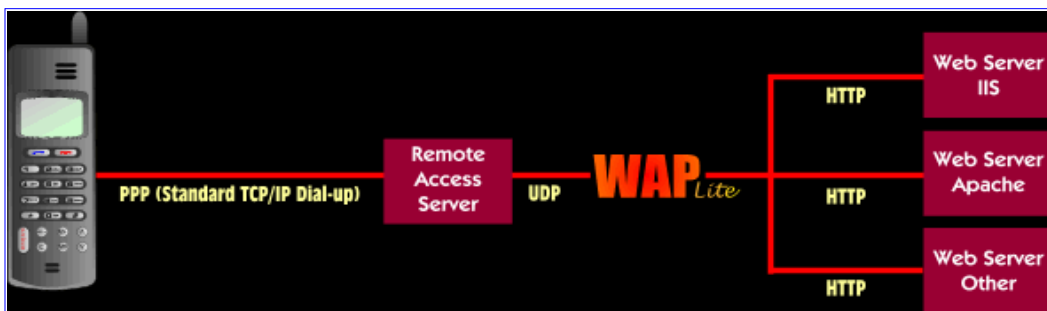
[Wapforce](#) has links to many related WAP sites, as well as developer software, and services for WAP- enabled telephones and PDAs.

The [WAPLY](#) site contains links to many of the WAP application sites.

"The Internet was pretty exciting the first time around. An amazing new way of communicating, and storing information—and now it's as though the whole world lives there. Well, we think it could be happening all over again—in miniature, and on

a cell phone near you.... What I felt the world needed was a vendor-independent resource...."

WAPtastic is being re-launched as AnywhereYouGo.com. The new site will continue offering the same services that WAPtastic used to, and will also provide information about all wireless application technologies. The goal is to become the world's leading independent wireless development community.

The WAP ring allows people to move sequentially between web sites that are specifically about WAP.

WAPAW.COM is the leading syndicated wireless search engine and directory for use with WAP- enabled devices such as mobile phones, PDAs, and other handheld devices.

Phone.com turns mass-market wireless phones into Internet companions. Developers use the UP.SDK to create content and applications for industry-standard Internet servers. The UP.SDK is available for no charge to all developers, and has the tools and interfaces necessary to bring innovative applications to life on the world's wireless networks.

WAP online.com walks you through setting up your first WML home page.

Ericsson Mobile Communications and Opera Software A/S signed an agreement for the use of the Opera for Linux Internet technology to enable World Wide Web browsing on the Ericsson cordless screen phone HS210. The Ericsson screen phone is a complete communication center, a combination of cordless telephony, and Internet access. It's a answering machine, address book, and a message center.

I've been using the Opera browser. I have Netscape and Internet Explorer loaded on my machine, but Opera is the one that I use, unless some web site requires something different. Opera is small, fast, easily fits on a floppy.

VirtuaCom bills itself as "the most interoperable WAP Gateway in the world today". It requires the ShockWave/Flash plug in to use the site.

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If you would like to add any information on this topic or request a specific topic to be covered, contact [Bob Paddock.](#)

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