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(71) Applicant *(for all designated States except US)*: **RESEARCH IN MOTION LIMITED** [CA/CA]; 295 Phillip Street, Waterloo, Ontario N2L 3W8 (CA).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MAJOR, Harry, R.** [CA/CA]; 332 Milla Court, Waterloo, Ontario N2L 6N4 (CA). **KNOWLES, Michael** [CA/CA]; 235 Beaver Creek Road, Waterloo, Ontario N2T 2S9 (CA).

(74) Agent: **PATHIYAL, Krishna, K.**; Research In Motion Limited, 295 Phillip Street, Waterloo, Ontario N2L 3W8 (CA).

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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,*

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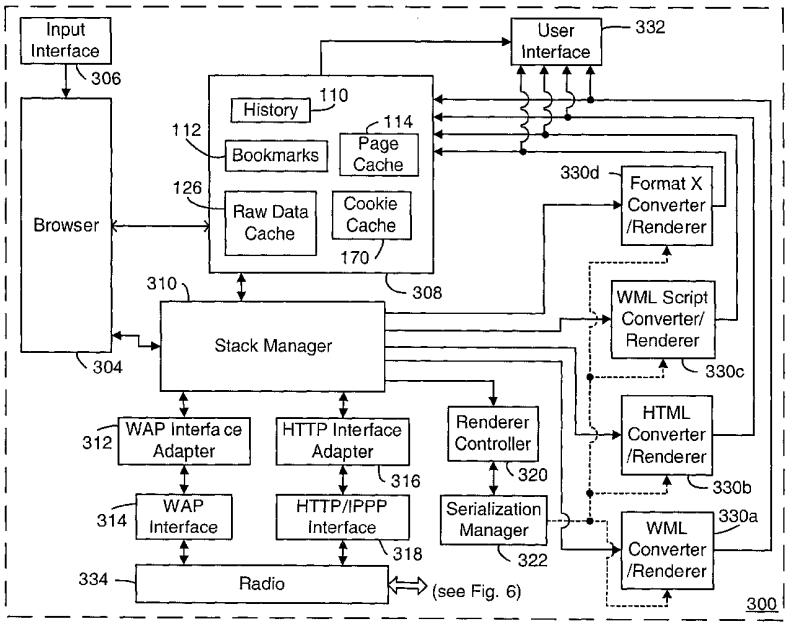
(54) Title: INFORMATION BROWSER SYSTEM AND METHOD FOR A WIRELESS COMMUNICATION DEVICE



(57) Abstract: An information browser system and method enables sending of information request to remote information sources and receiving of requested information from the remote sources on a wireless communication device. Information in any of a plurality of formats, including WML, HTML and WMLScript, is converted into a format in which the information can be displayed or otherwise further processed by the device. Information browsing functions may also be integrated with other communication functions on a mobile communication device.

WO 02/052785 A2

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Information Browser System and Method for a Wireless Communication Device

FIELD OF THE INVENTION

The present invention relates to browsing information content in World Wide Web (WWW) pages accessed using a wireless device.

BACKGROUND OF THE INVENTION

Accessing browsable information such as Web content on the Internet is a part of everyday life for many people today. Most users currently access such information content by using computer systems that are physically connected to the Internet via a modem and physical wires of some sort, typically a telephone line or coaxial cable. At the same time, wireless devices and the wireless networks they work on are becoming more widely available. Many modern wireless networks are connected or at least connectable to the Internet. As such, the demand for browsers on wireless devices that can access the World Wide Web is increasing rapidly.

Wireless devices and the associated wireless networks within which they operate present several design challenges not normally encountered in standard wired networks. First, unlike personal computers (PCs) and servers that are wired to the network, mobile and other wireless devices are connected to the network using radio links. As such, they are only connected when the device is "in range", or within

coverage of one of the wireless network's radio transmitters. Because the wireless networks do not completely cover all areas where users will be using the devices, connectivity to the networks can be frequently gained and lost. No connectivity guarantees can be made at any given point in time.

Furthermore, even when a device is connected to a wireless network, the bandwidth of such networks can be quite low. Current networks, such as Mobitex™ and Datatac™, operate in the 9.6 kilo-bit per second (kbps) to 14.4kbps range. Newer networks, such as General Packet Radio Service (GPRS) and the Global System for Mobile Communications (GSM), will operate in the 20kbps to 110kbps range. As will be apparent to those skilled in the art, this range relates to raw speed. Real speed is lower when retransmissions of corrupted packets and network congestion are accounted for. So-called third generation networks, such as Universal Mobile Telecommunications System (UMTS), are expected to operate in the 384kbps range or higher, but are not expected to be deployed for at least several years.

Most mobile devices also currently have much lower screen resolution and processing power than typical PCs or laptops. For example, known mobile devices tend to have screen resolution on the order of 160 x 160 x 1 bit (monochrome) or smaller, as compared to low-end desktop PC or laptop monitor resolution of 1024 x 768 x 24bits.

For a user, these factors make the browsing experience on mobile devices

considerably different from that on computers with wired network connections. From the perspective of service providers and device manufacturers, such characteristics of wireless devices and wireless networks hinders the provision of browsing capabilities in wireless systems. In particular, much of the information content on wired networks assumes that a computer or device will be connected to the network for the duration of the browsing session. In addition, content is increasingly being geared towards bandwidths of 128kbps or higher and to high-resolution screens and computers with extensive processing power to support animations, large graphics, and the like.

The Wireless Application Protocol (WAP) Forum was created to address incompatibilities between the capabilities of current mobile devices and wireless networks and the various processing, memory and display requirements for viewing different types of Web content. The result was the WAP specification, a de-facto worldwide standard, which includes both a protocol to deliver Web content to wireless devices, and a new form of markup, called Wireless Markup Language (WML). WML is geared towards providing the essence of high-value web pages for extremely small devices such as cellular telephones.

The WAP protocol addresses the issue of delivering content to wireless devices on slow, unreliable networks. However, although WML allows content to be developed for cell phones, it is not clear that it is as appropriate for personal digital assistant (PDA) style mobile devices, which have larger screens and tend to have more processing power than most cell phones.

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