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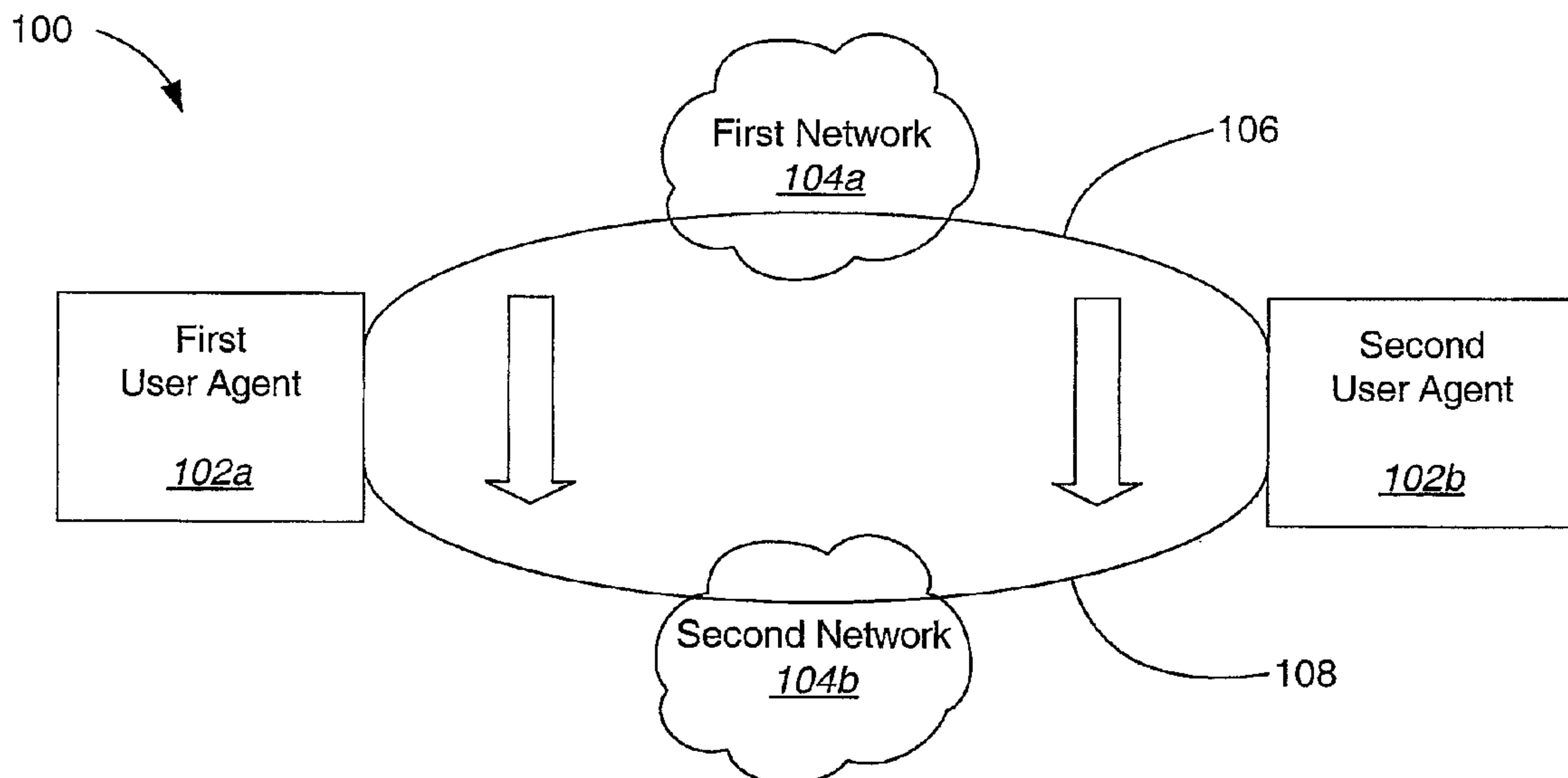
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(54) Titre : TRANSFERT INTERCELLULAIRE SANS COUPURE ENTRE RESEAUX DISTINCTS ASSISTE PAR UN
PROTOCOLE D'APPLICATION DE BOUT EN BOUT

(54) Title: SOFT HANDOFF ACROSS DIFFERENT NETWORKS ASSISTED BY AN END-TO-END APPLICATION
PROTOCOL



(57) Abrégé/Abstract:

A method for soft handoff across different networks is disclosed. A first communication link through a first network is used for communicating between a first user agent and a second user agent. The user agents negotiate to use a second communication link for the same call. The second communication link is established through a second network between the first user agent and the second user agent while maintaining the first communication link. Related data is sent through the first communication link and the second communication link such that the related data is for the same call. The first communication link is dropped and communication is continued using the second communication link.



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ABSTRACT

A method for soft handoff across different networks is disclosed. A first communication link through a first network is used for communicating between a first user agent and a second user agent. The user agents negotiate to use a second communication link for the same call. The second communication link is established through a second network between the first user agent and the second user agent while maintaining the first communication link. Related data is sent through the first communication link and the second communication link such that the related data is for the same call. The first communication link is dropped and communication is continued using the second communication link.

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SOFT HANDOFF ACROSS DIFFERENT NETWORKS ASSISTED BY AN END-TO-END APPLICATION PROTOCOL

This application is a divisional of Canadian patent application number 2,515,902 filed on February 12, 2004.

BACKGROUND

Field

[1001] The present invention relates generally to soft handoff in communications systems, and more specifically, to soft handoff across different types of communication networks assisted by an end-to-end application protocol.

Background

[1002] Communications systems are used for transmission of information from one device to another. Today there are many different kinds of communication devices and many different kinds of communication networks that may be used. Examples of communication devices include, but are not limited to, a telephone, a cellular phone, a desktop computer, a laptop computer, a personal digital assistant, a pager, and the like. Different communication networks include, but are not limited to, a Code Division Multiple Access (CDMA) 1x network, a Local Area Network (LAN), a wireless LAN, the Internet, a Wideband CDMA (W-CDMA) network, a General Packet Radio Service (GPRS) network, etc. As shown, a user has many options to choose from in selecting a communication system for his or her use.

[1003] With the many different communication options available to a user, there may be times when a user wishes to change the way in which he or she is achieving the communications while engaged in a current communication link. For example, the user may wish to switch networks or devices during a call or a session without losing the call or session. A call or session is a communication state shared by two or more parties that have established communication link(s) between them; one example of a call or session is a Voice over IP call. A need

exists, therefore, for systems and methods to enable a user to be able to switch networks or devices during a call or a session without losing the call or session.

BRIEF DESCRIPTION OF THE DRAWINGS

[1004] FIG. 1 is a network block diagram illustrating soft handoff assisted by an end-to-end application protocol;

[1005] Figure 2 is a block diagram of certain components in an embodiment of a user agent for a case where the user agent is in a mobile terminal;

[1006] FIG. 3 is a general flow diagram illustrating a method for soft handoff assisted by an end-to-end application protocol as depicted in FIG. 1;

[1007] FIG. 4 is a general flow diagram illustrating a method for soft handoff assisted by an end-to-end application protocol where the user agent is notified that another user agent desires to move to a new network;

[1008] FIG. 5 is a flow diagram illustrating discovery of a new network and a determination whether to move to the new network;

[1009] FIG. 6 is a block diagram illustrating an embodiment of network discovery settings;

[1010] FIG. 7 is a block diagram of an embodiment of network preference criteria;

[1011] FIG. 8 is a block diagram of a system using a network application gateway to facilitate soft handoff assisted by an end-to-end application protocol;

[1012] FIG. 9 is a flow diagram illustrating a method for using a network application gateway to facilitate soft handoff assisted by an end-to-end application protocol;

[1013] FIG. 10 is a block diagram of another embodiment of a system using a network application gateway to facilitate soft handoff assisted by an end-to-end application protocol;

[1014] FIG. 11 is a block diagram illustrating call transfer from one device to another device; and

[1015] FIG. 12 is a flow diagram illustrating call transfer from one device to another device as depicted in FIG. 11.

