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Ishiyama et al.

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(45) **Date of Patent: Jun. 7, 2005**

(54) **MOBILE COMMUNICATION SCHEME WITHOUT HOME AGENTS FOR SUPPORTING COMMUNICATIONS OF MOBILE NODES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/573,189**

(22) Filed: **May 19, 2000**

(30) **Foreign Application Priority Data**

May 20, 1999 (JP) 11-140373

(51) **Int. Cl.**[7] **G06F 15/16**; G06F 15/173

(52) **U.S. Cl.** **709/245**; 709/224; 709/228; 709/207

(58) **Field of Search** 709/206–207, 709/203, 223–224, 228, 238, 242, 245, 204, 205

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(57) **ABSTRACT**

The disclosed mobile communication scheme enables easy change of a connected location of a mobile computer on the IP network when the mobile computer leaves its home network, without requiring the use of a home agent, while providing a sufficient level of security. The mobile computer transmits a packet from a visited site network to a correspondent by encapsulating an inner packet having a home address as an original source address within an outer packet having a current location address as a source address. The correspondent which received this encapsulated packet recognizes the source addresses of the outer and inner packets of the encapsulated packet as the current location address and the home address of the mobile computer, respectively, so that the correspondent can transmit a packet to the mobile computer thereafter by encapsulating an inner packet having the home address as a final destination address within an outer packet having the current location address as a destination address.

16 Claims, 9 Drawing Sheets

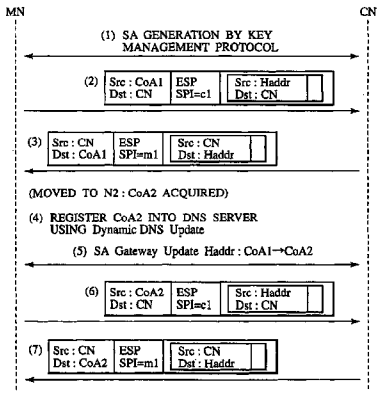

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FIG. 1

PRIOR ART

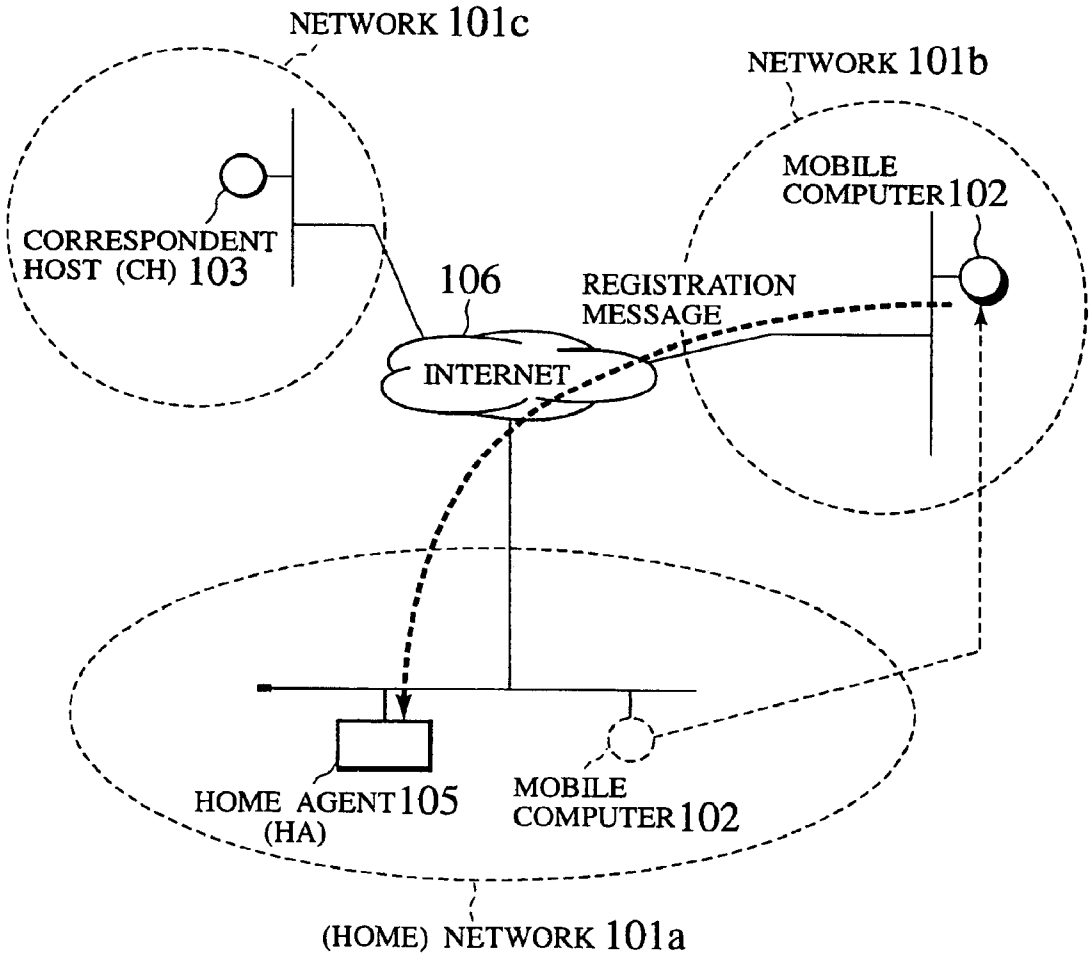

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FIG. 2

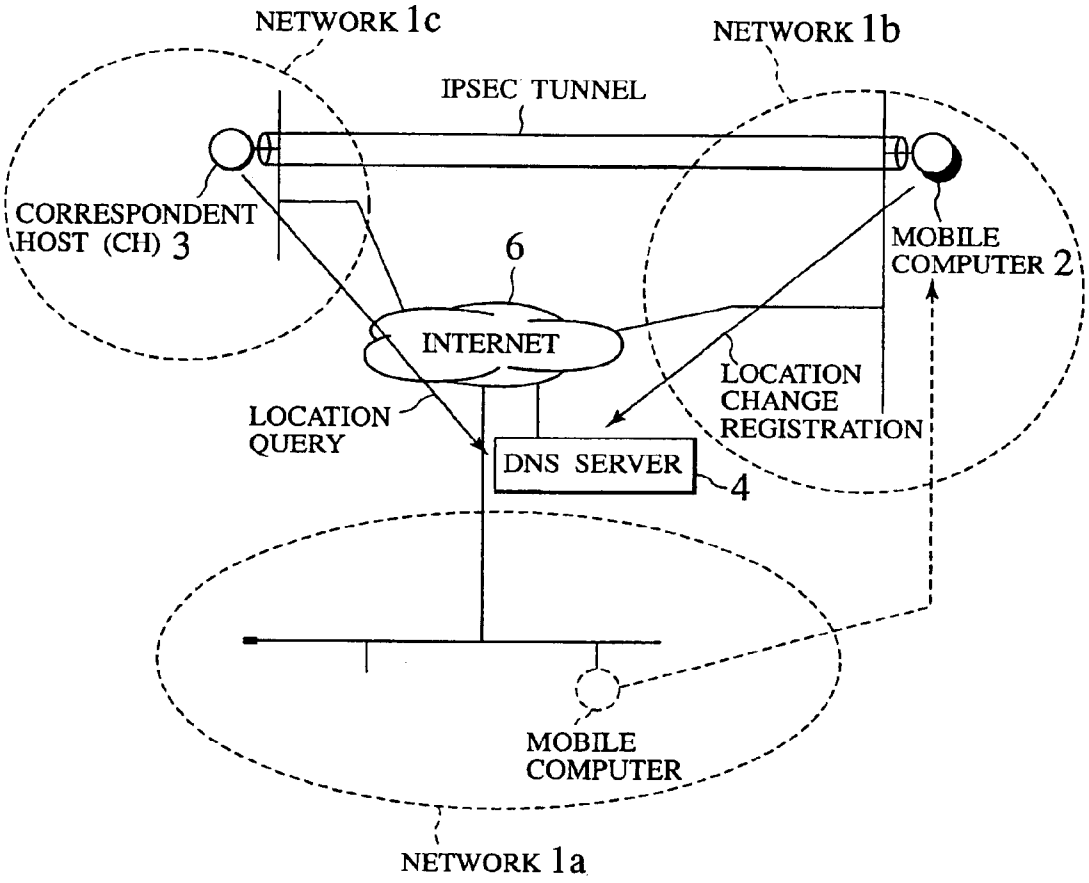

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FIG. 3

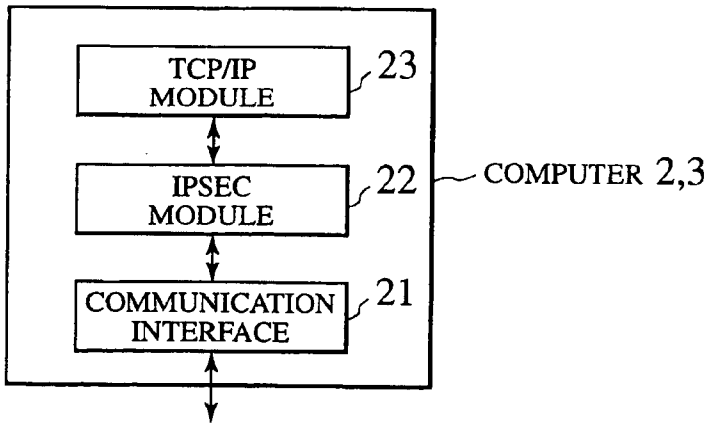

FIG. 4

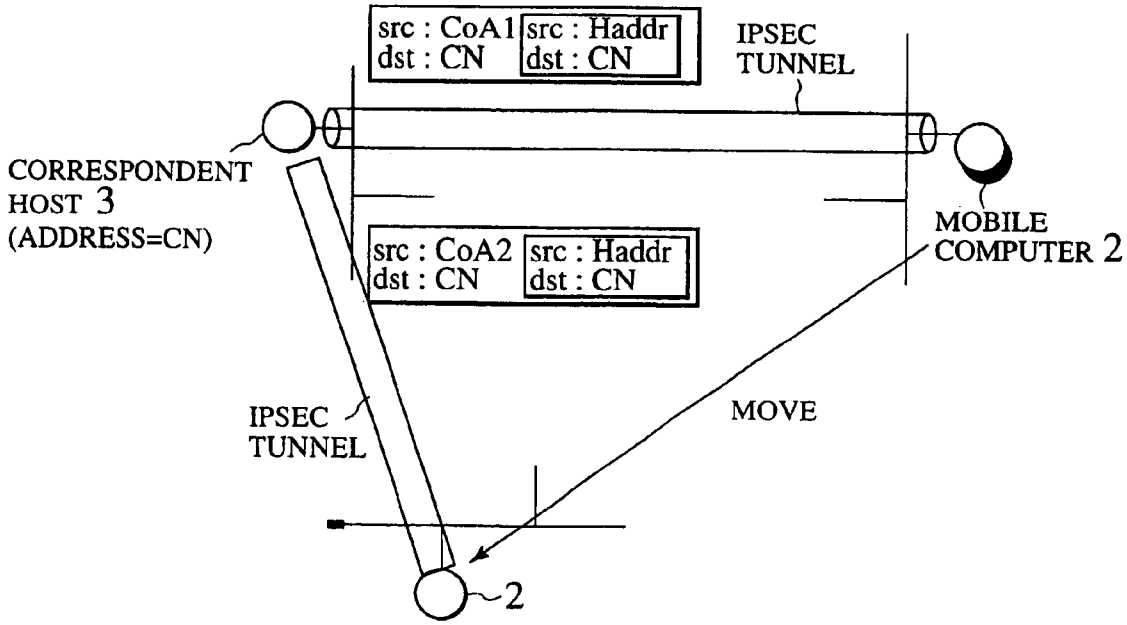

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FIG. 5

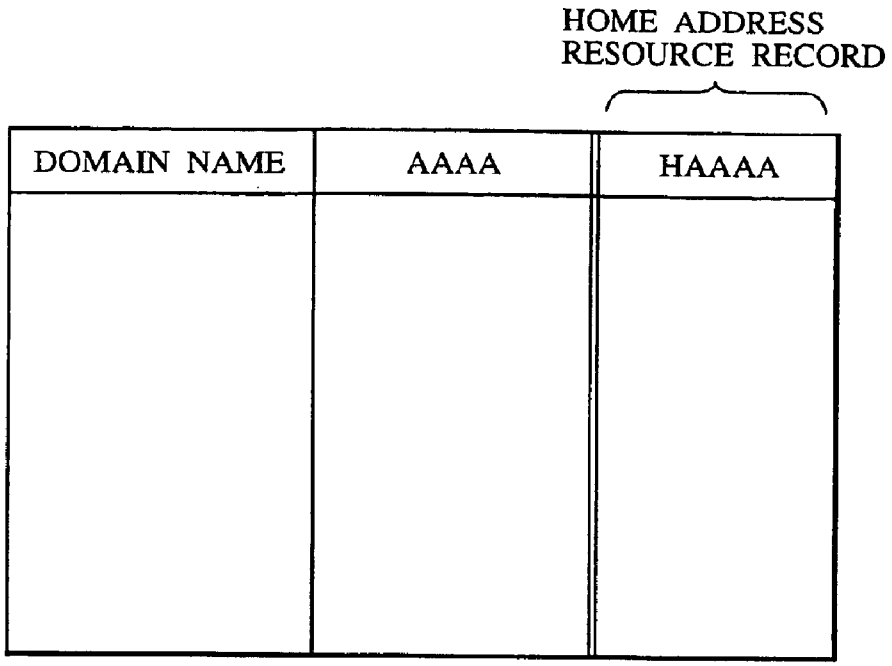
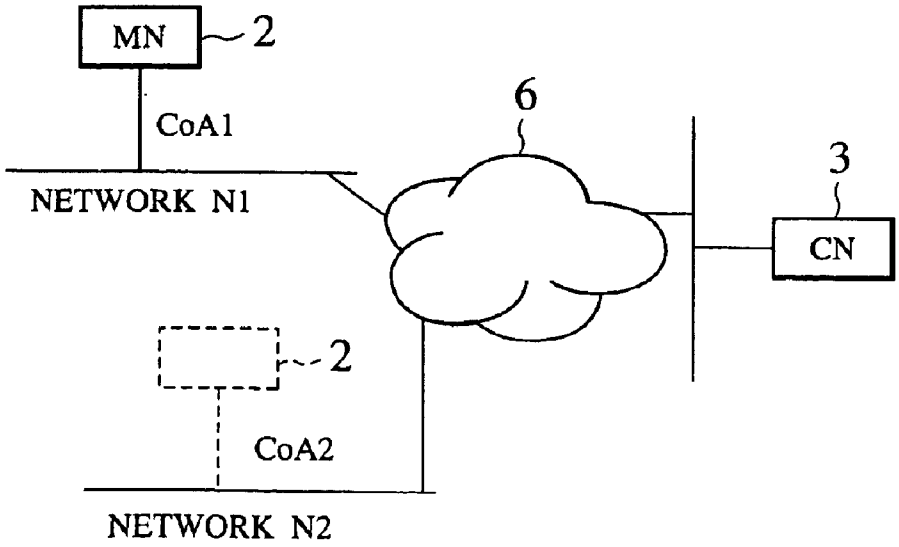


FIG. 6



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