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**Forsl w**

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(54) **NETWORK-BASED MOBILE WORKGROUP SYSTEM**

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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 777 days.

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Supporting nomadic users within virtual private networks Karnouskos, S. Service Portability and Virtual Customer Environments,2000 IEEE, vol., Iss., 2000 pp.: 128–133 URL: [http://ieeexplore.ieee.org/iel5/7436/20219/00934172.pdf?isNumber=20219&prod=STD&.\\*](http://ieeexplore.ieee.org/iel5/7436/20219/00934172.pdf?isNumber=20219&prod=STD&.*)

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*Primary Examiner*—Ario Etienne

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(65) **Prior Publication Data**

(74) *Attorney, Agent, or Firm*—Banner & Witcoff, Ltd.

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(57) **ABSTRACT**

- (51) **Int. Cl.**<sup>7</sup> ..... **G06F 15/16**; H04Q 7/20
- (52) **U.S. Cl.** ..... **709/227**; 709/205; 455/461
- (58) **Field of Search** ..... 709/203, 224, 709/227, 204, 205, 229; 370/328, 397, 352, 401, 329; 455/555, 554.1, 461, 554, 414

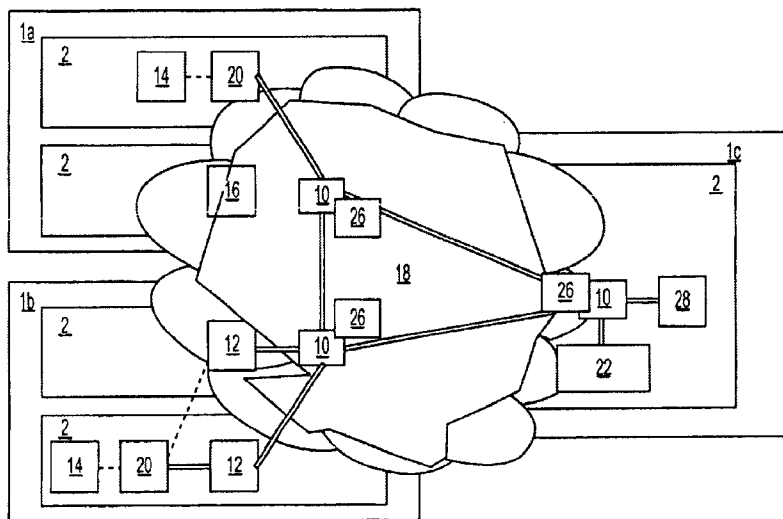
A network-based mobile workgroup system has considerably wider appeal and application than normal virtual private networks in that it provides seamless mobility across a number of access technologies at the same time as it offers a granular security separation down to workgroup level. The mobile workgroup system is an access management system for mobile users with VPN and firewall functionality inbuilt. The mobile user can access the mobile workgroup system over a set of access technologies and select server resources and correspondent nodes to access pending their workgroup membership approvals. All workgroup policy rules are defined in a mobile service manager and pushed down to one or more mobile service routers for policy enforcement. The mobile service router closest to the mobile client, and being part of the mobile virtual private network, performs regular authentication checks of the mobile client during service execution. At the same time it performs traffic filtering based on the mobile user’s workgroup memberships. Together, these two components constitute an unprecedented security lock, effectively isolating a distributed workgroup into a mobile virtual private network.

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**101 Claims, 16 Drawing Sheets**



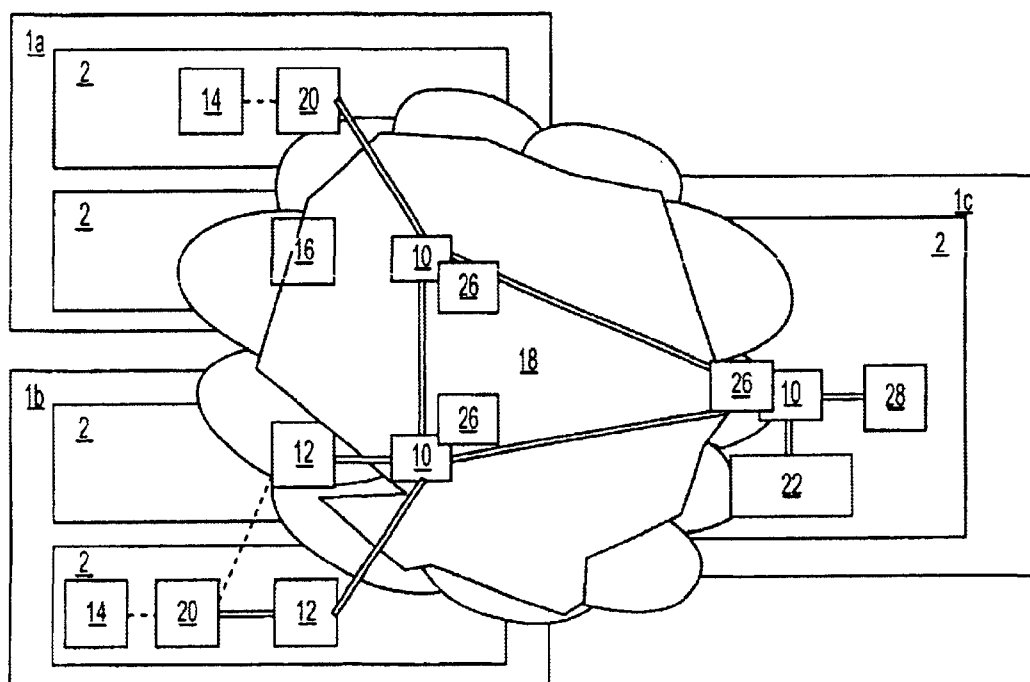


FIG. 1

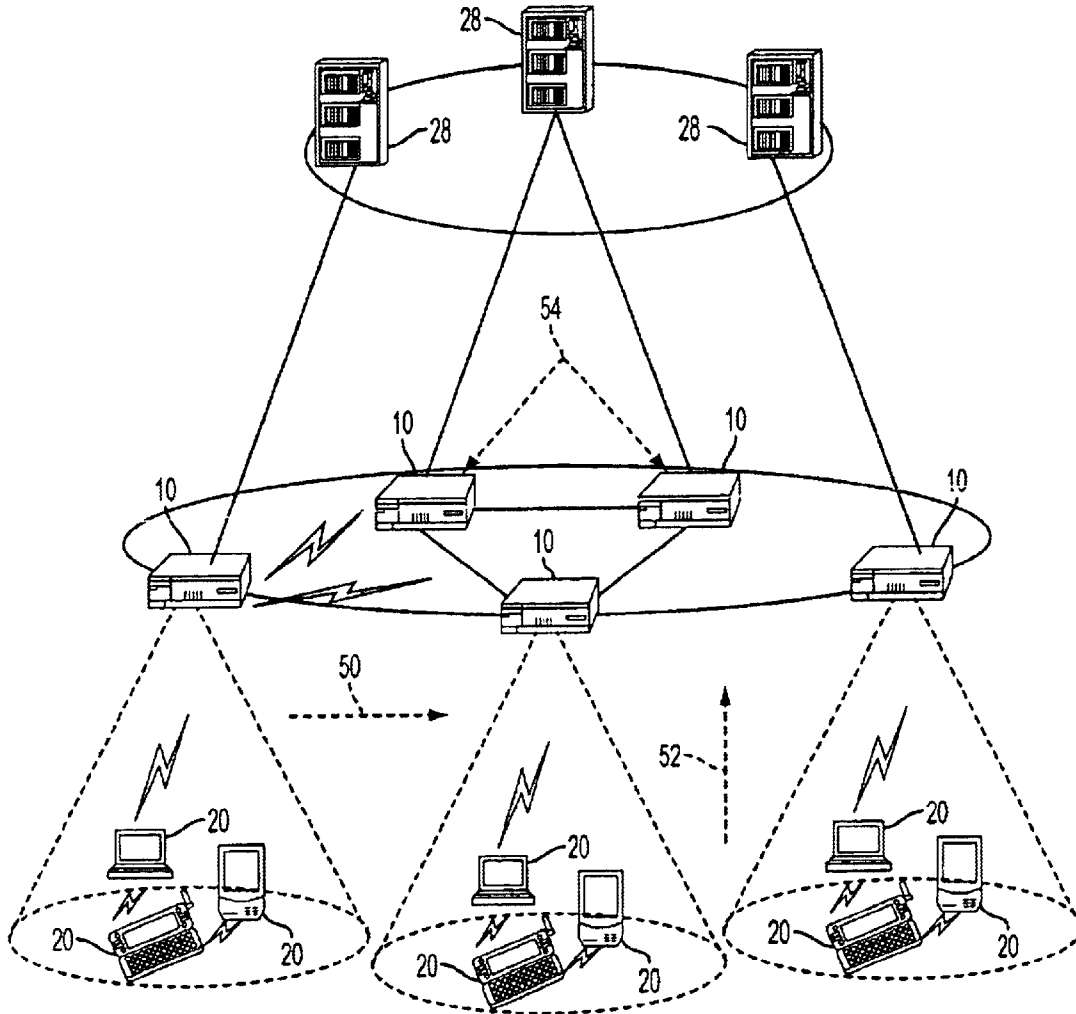


FIG. 2

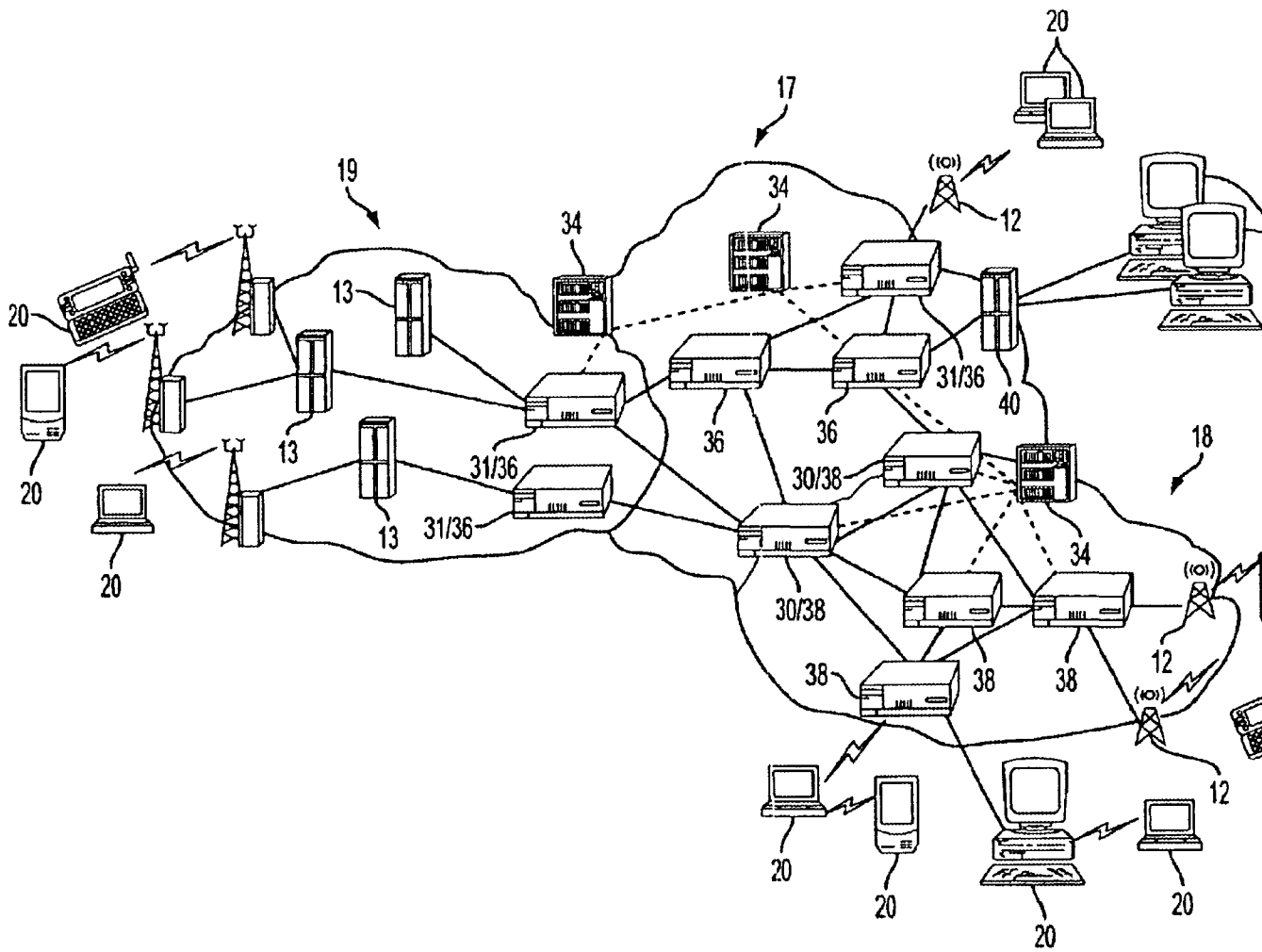


FIG. 3

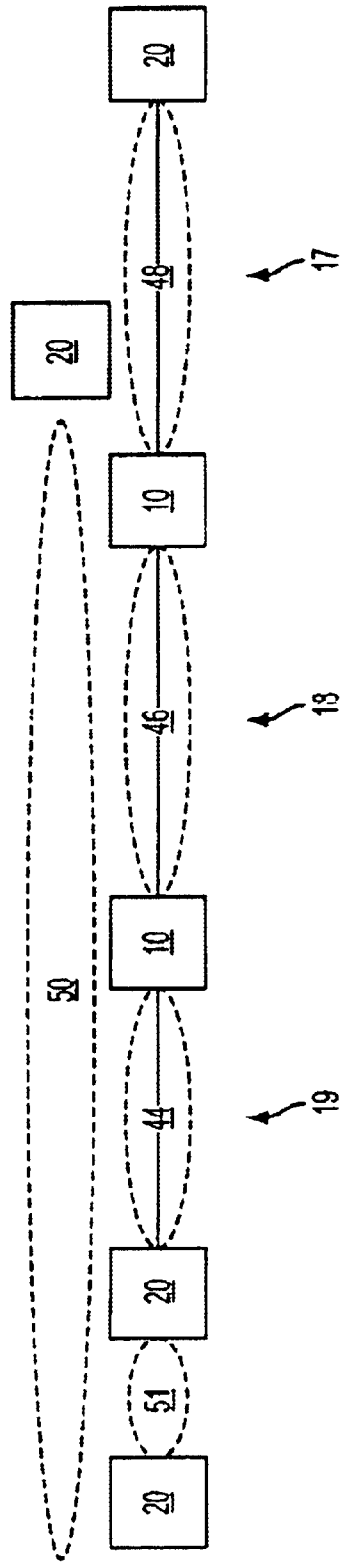


FIG. 4

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