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Burgaleta Salinas et al.

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(54) METHOD AND APPARATUS FOR COMMUNICATING DATA PACKETS FROM AN EXTERNAL PACKET NETWORK TO A MOBILE RADIO STATION

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(58) Field of Search 370/351, 352, 370/389, 395, 401, 400, 402, 403, 480, 465, 338, 341, 349, 428, 468, 337, 347, 346, 345, 350; 455/422, 450, 452, 453, 428, 560, 554

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(57) ABSTRACT

Packet data are efficiently communicated from a packet data network to a mobile subscriber by way of a mobile communications network. When the mobile communications network receives a message from the packet data network intended for the mobile subscriber, an available mobile communications network packet address is dynamically assigned from a pool of packet addresses to the mobile subscriber. Thereafter, packets included in the data message are routed to the mobile subscriber using that dynamically-allocated address. When the address is no longer needed, it is returned to the pool. Each packet address in the pool includes a corresponding indication that designates whether that address is allocated or available for allocation. A correspondence is established between a name associated with the mobile subscriber (e.g., an Internet domain name), and a mobile subscriber identifier (e.g., an IMSI). A dynamically-assigned packet address is associated with the corresponding mobile subscriber name and identifier. Thereafter, packet data from the packet data network that include the mobile station name are directed to the mobile subscriber using the corresponding mobile subscriber identifier and the associated, dynamically-allocated packet address.

32 Claims, 10 Drawing Sheets

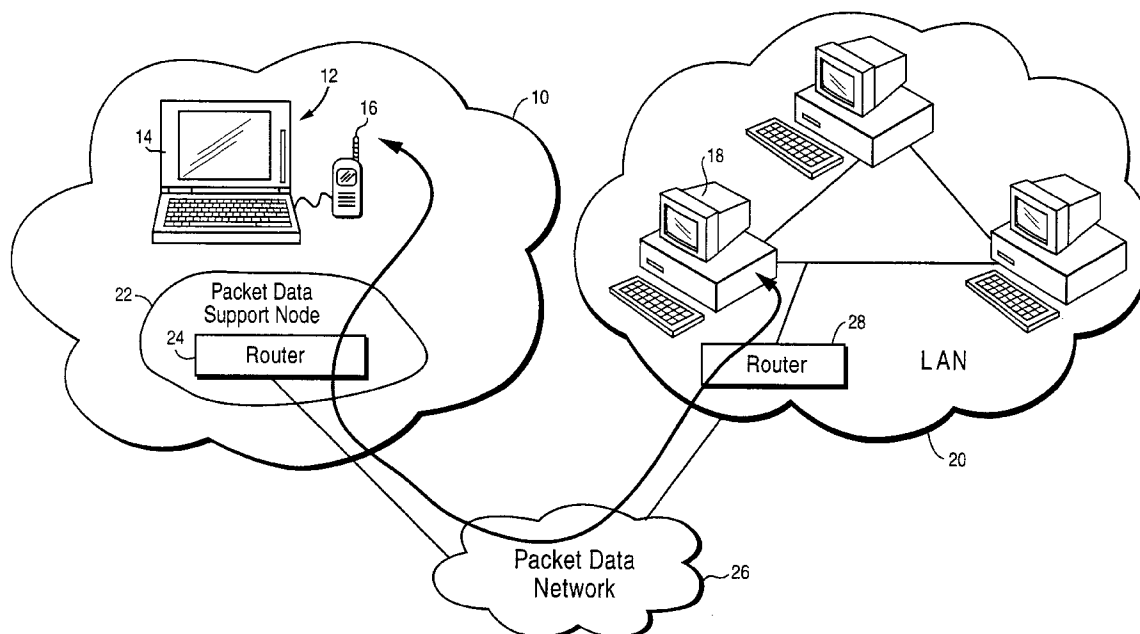
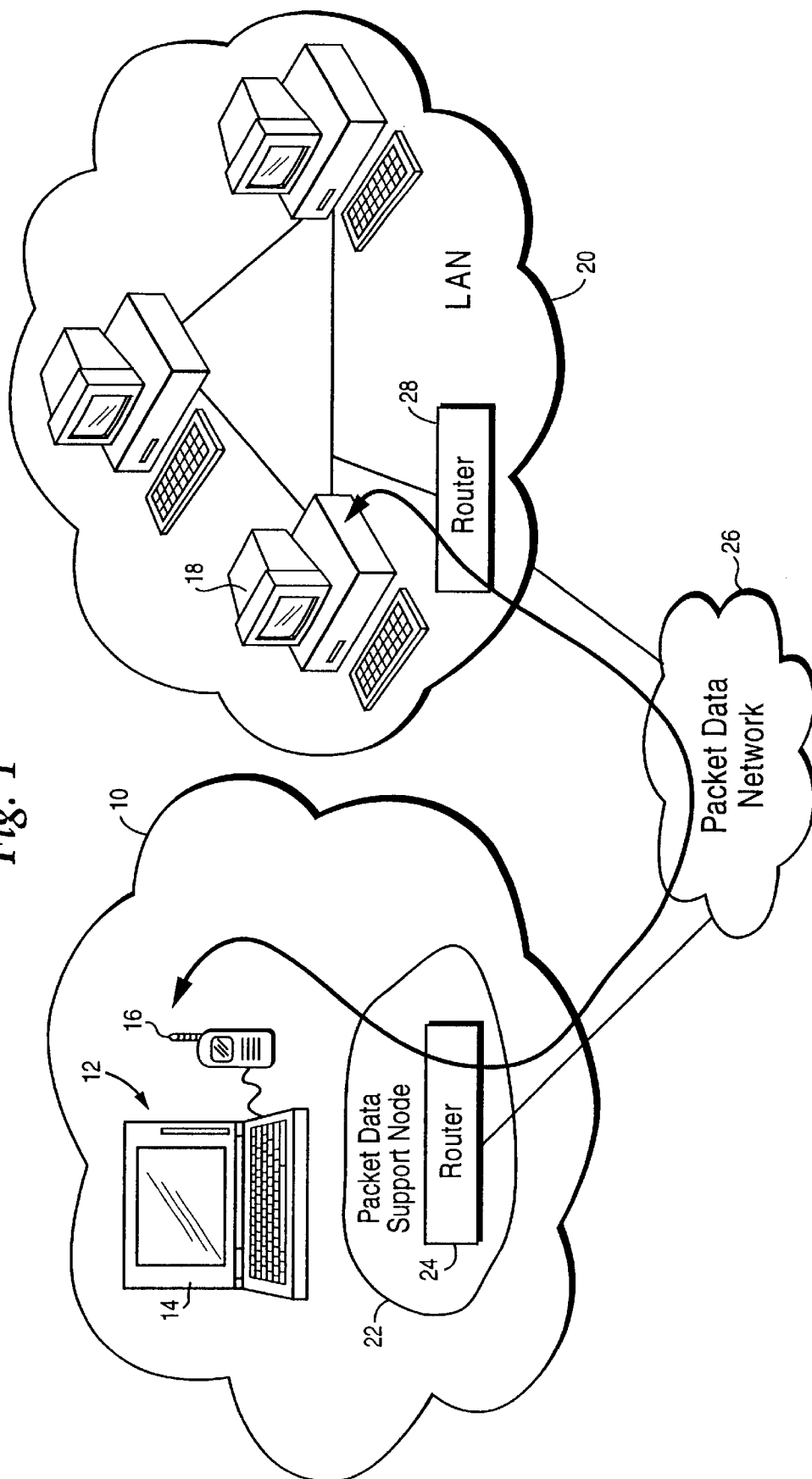


Fig. 1



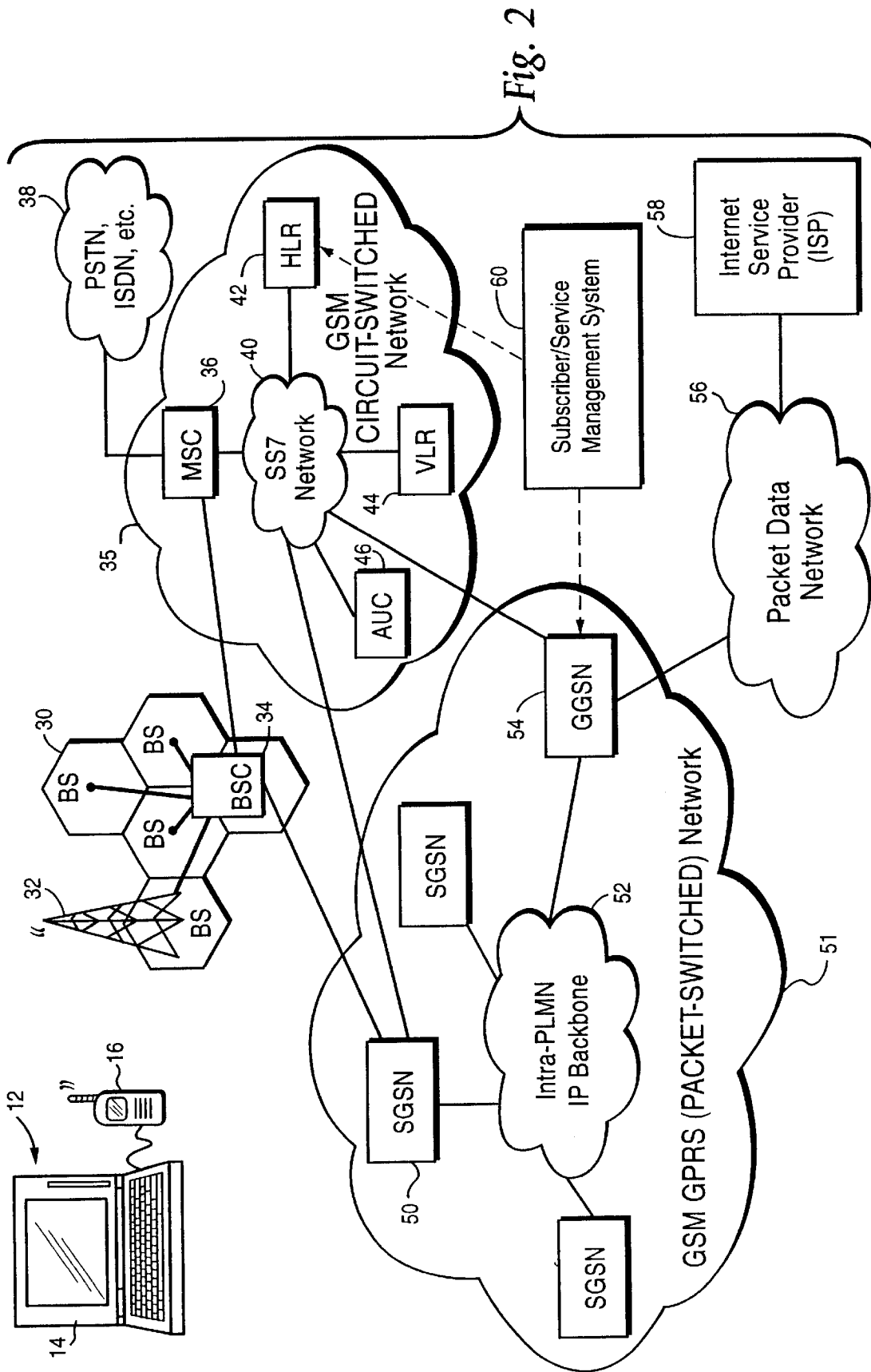


Fig. 2

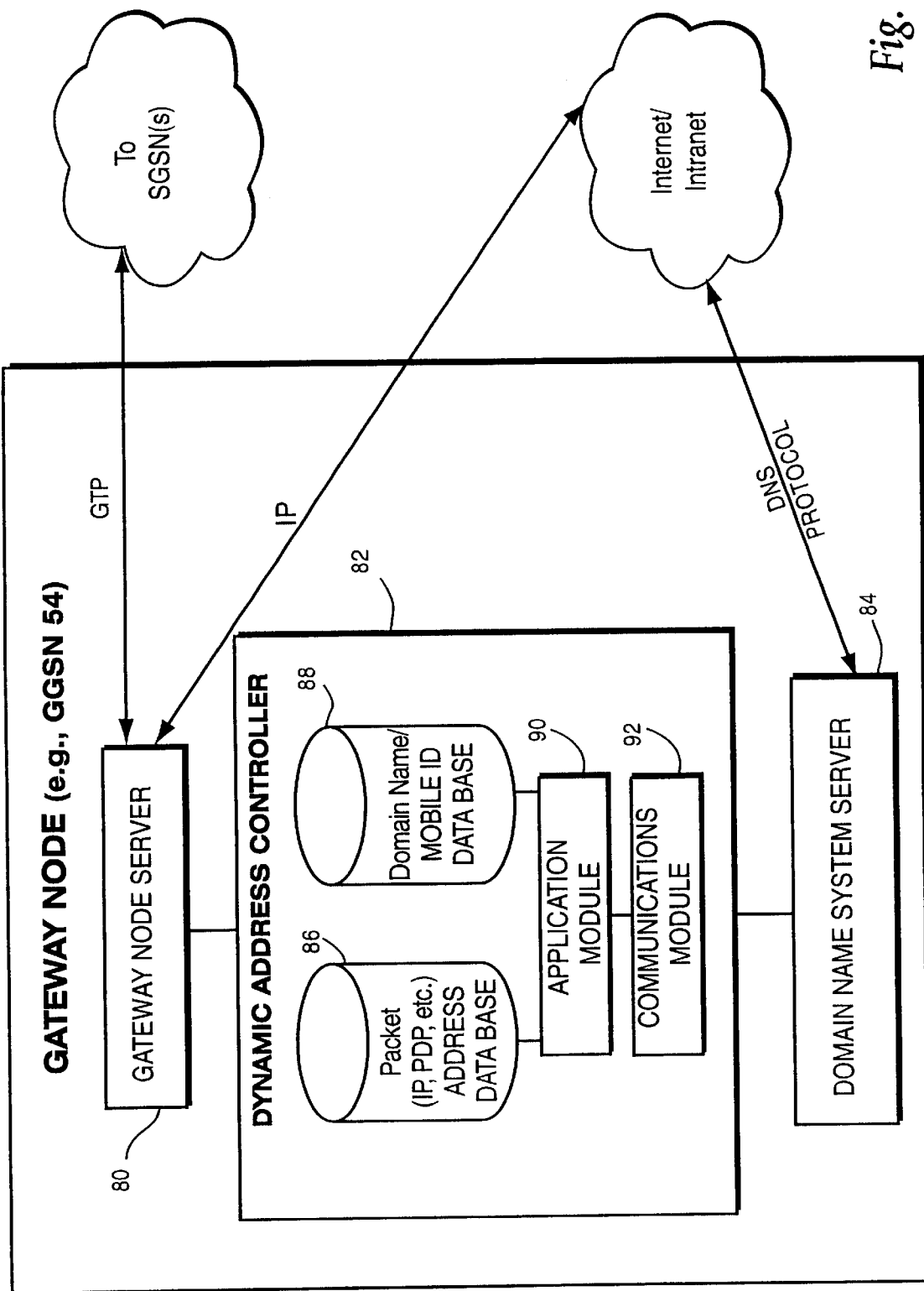


Fig. 3A

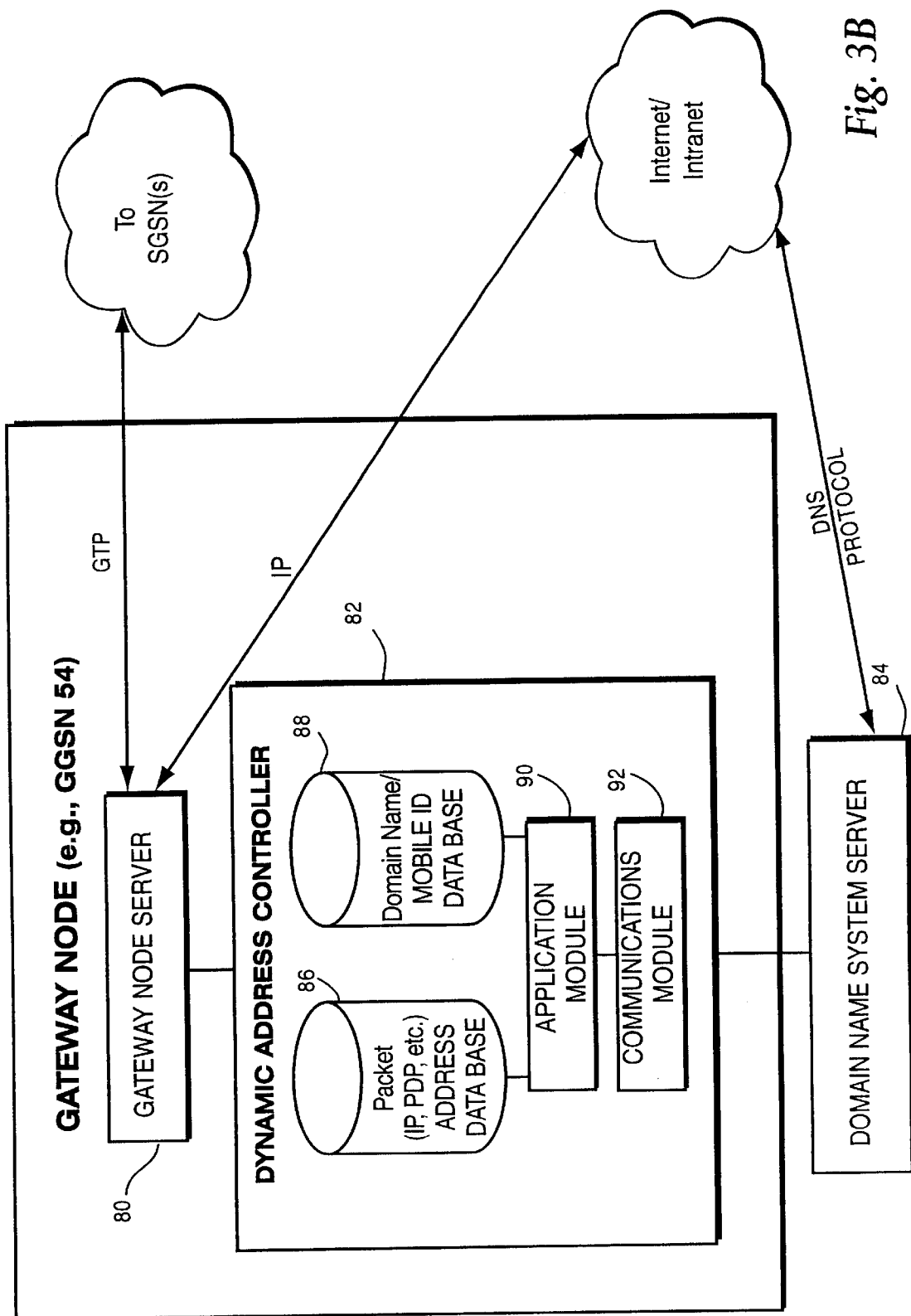


Fig. 3B

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