



- [54] **METHOD AND SYSTEM FOR ADDRESSING NETWORK HOST INTERFACES FROM A CABLE MODEM USING DHCP**
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- [52] U.S. Cl. .... **709/225; 709/203; 709/202; 709/217; 709/218; 709/219; 709/226; 370/312; 370/352; 370/389; 370/432; 370/475; 348/6; 348/734; 359/164; 359/165; 364/705.05**
- [58] **Field of Search** ..... **709/224, 203, 709/202, 217, 218, 219, 226, 227, 231, 238, 245; 711/200; 370/312, 352, 389, 432, 475; 364/705.05; 348/6, 734; 359/164, 165**

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[57] **ABSTRACT**

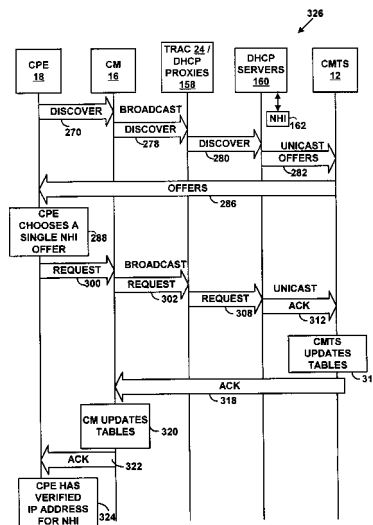
A method and system are provided to allow a cable modem to discover an address of a network host interface on a cable television network to connect the cable modem to a data network (e.g., the Internet). The cable modem is used in a data-over-cable system with telephony return. The cable modem is connected to a cable television network over a downstream cable data channel and connected to a public switched telephone network over a serial telephone line. The method provides a way for the cable modem to determine the address of network host interfaces (e.g., Internet Protocol hosts) available on the cable television system via the upstream channel connected to public switched telephone network. The method includes using existing Dynamic Host Configuration Protocol (“DHCP”) messages and message fields to discover network host interfaces available on the cable television system even though the cable modem only has downstream connection from the cable television network. The method and are used without changes to DHCP and can also be used in a data-over-cable system without telephony return.

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25 Claims, 23 Drawing Sheets



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FIG. 1

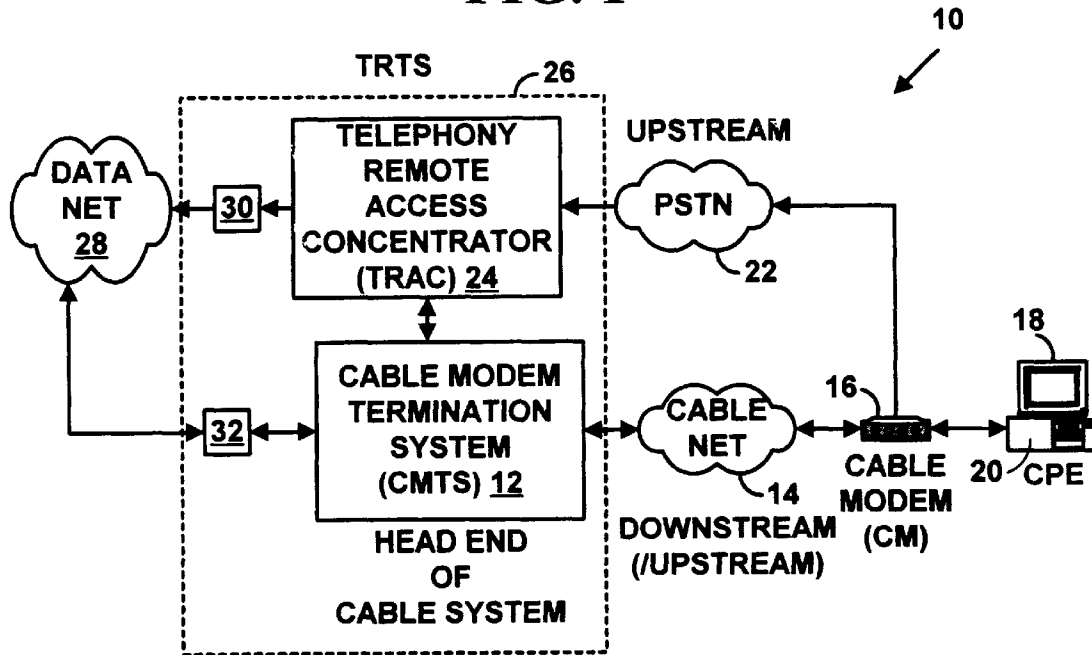


FIG. 2

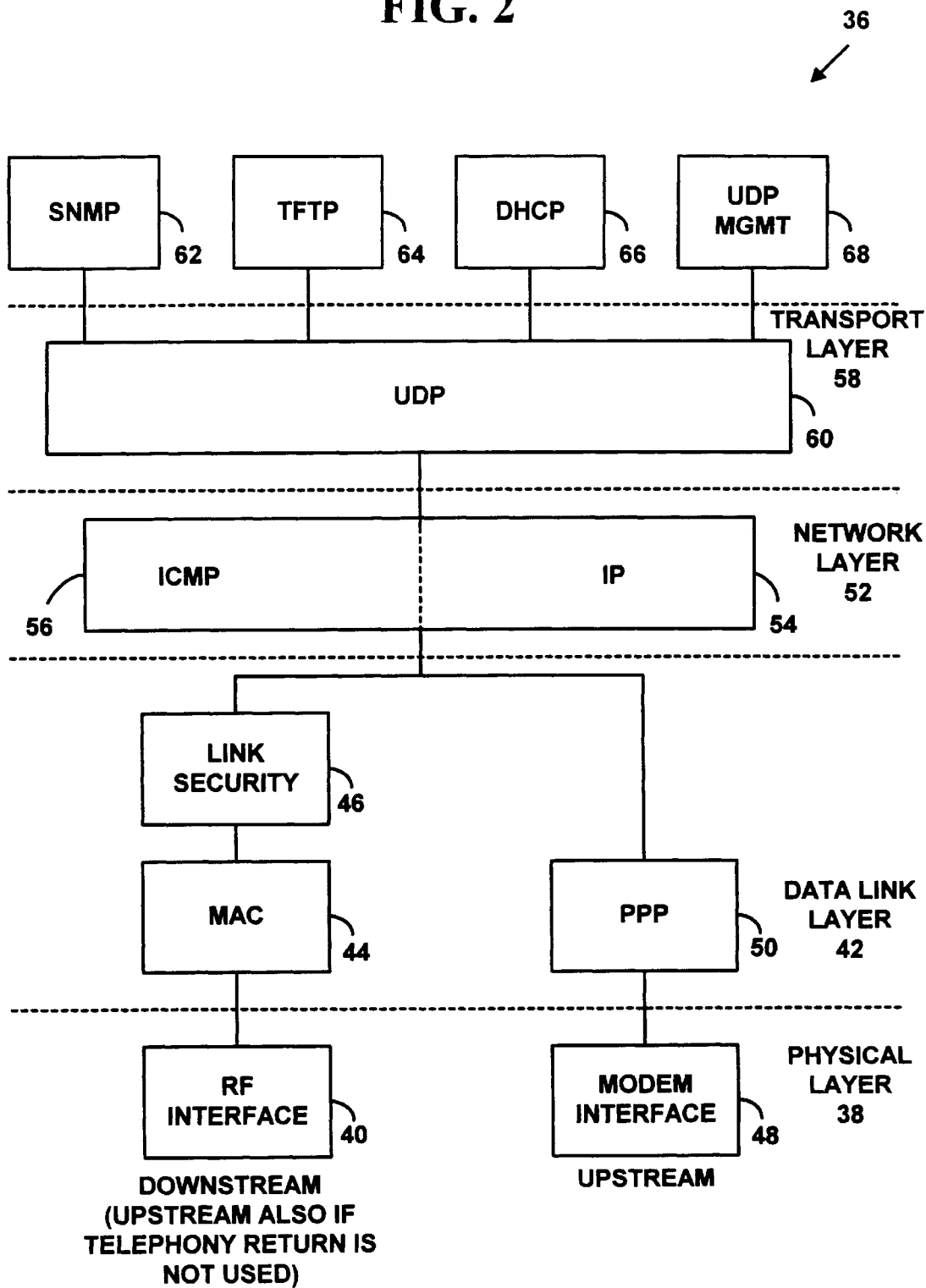


FIG. 3

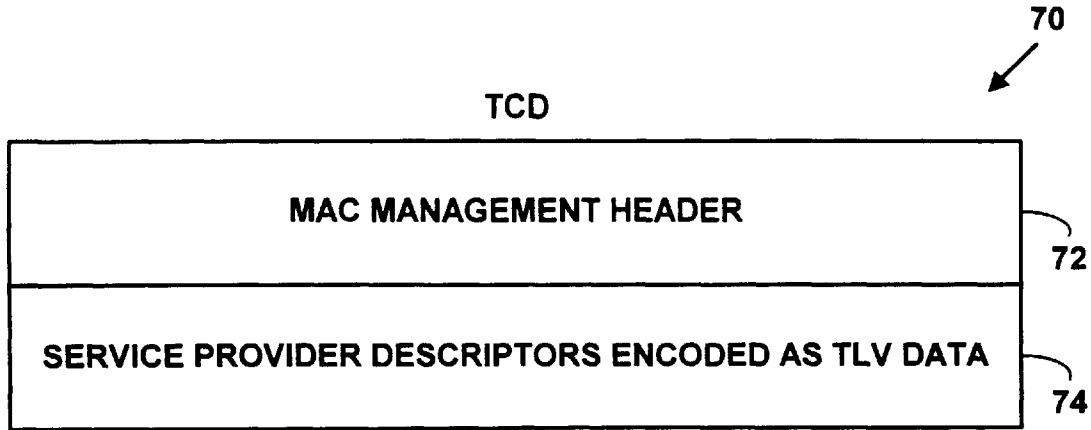
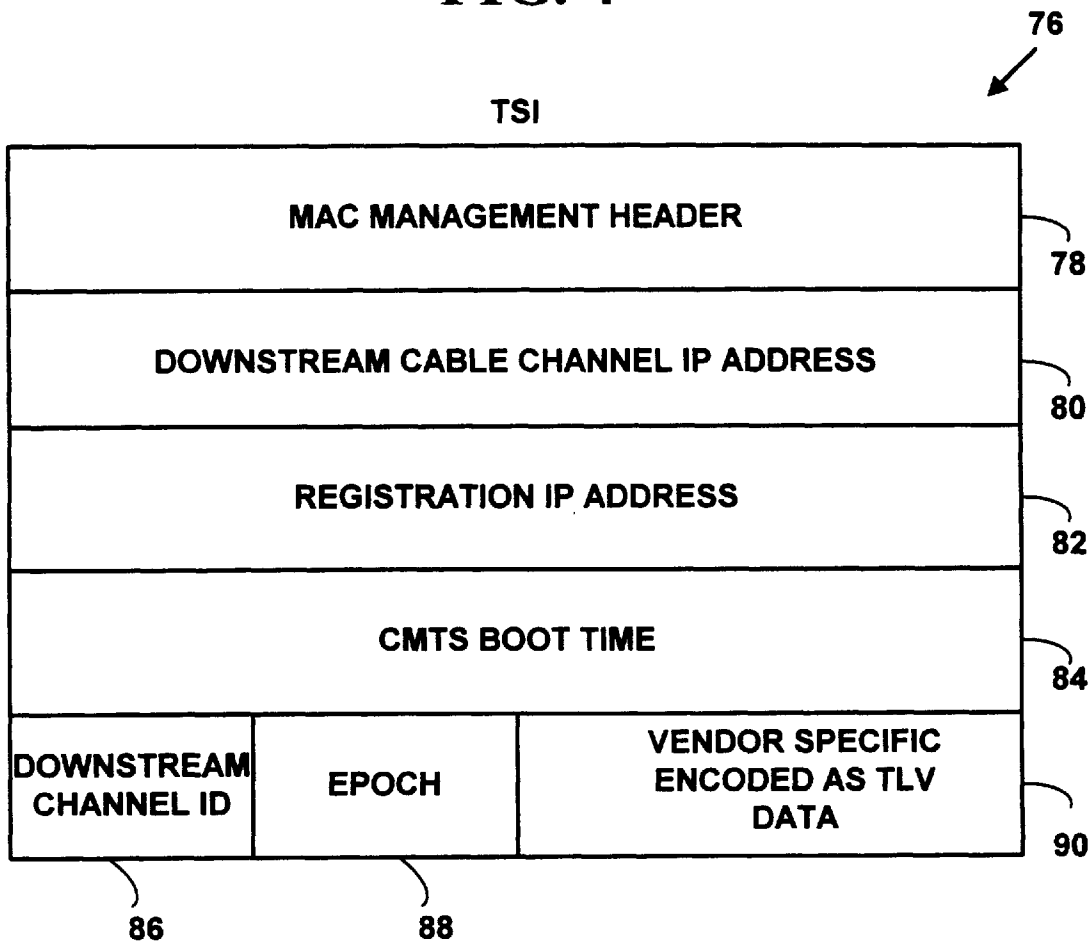


FIG. 4



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