

parameter set to include all subscriber classes. Task **314** broadcasts the parameter set on at least one of the broadcast channels associated with the antenna beam. The parameter set will be the original parameter set received in task **301** unless modified subsequently in tasks **304**, **308** or **312**. User classes listed in the parameter set will be inhibited from initiating an acquisition protocol on an acquisition channel. In a preferred embodiment, procedure **300** is repeated for each antenna beam **35** of satellite **12**.

While the invention has been described in terms of specific examples and with specific preferred embodiment, it is evident that many alternatives and variations will be apparent to those skilled in the art based on the description herein, and is intended to include such variations and alternatives in the claims.

As described herein, the advantages of the present invention will be apparent to those of skill in the art and provide an improved methods of operating various parts of a communication system. These advantages include global knowledge of the anticipated load for a particular satellite that is used in addition to local knowledge of satellite loading to prevent user access and reduce collisions during acquisition protocols. Another advantage includes the fact that local loading information that is obtained by a satellite can be used to update the global information. Another advantage to the present invention is that no transmission is required by a subscriber unit to determine that service is not available. This reduces power consumption of the subscriber unit, which may be a portable hand-held device, and reduces excess traffic on the acquisition channels which have limited capacity. The invention provides a method and apparatus for both load management and user priority. Another advantage to the present invention is that a subscriber unit may temporarily adjust its priority based on the type of service requested, for example in emergency situations.

What is claimed is:

**1.** A method of controlling access of subscriber units to a communication system comprised of a plurality of nodes, each node of said plurality having at least one antenna beam associated therewith, and each of said subscriber units having an assigned class identifier stored therein for discriminating among users, said assigned class identifier being either one of a plurality of regular user class identifiers or one of a plurality of special user class identifiers, said method comprising:

- a) identifying a geographic area likely to exhibit overload during a planning interval;
- b) calculating a proportion of users in said geographic area having regular user class identifiers desired to be temporarily blocked from accessing said communication system;
- c) forming a set of temporarily inhibited class identifiers from said plurality of regular user class identifiers to inhibit in said geographic area based on said proportion;
- d) creating a parameter set which includes said set of temporarily inhibited class identifiers;
- e) identifying at least one node of said plurality of nodes and an associated antenna beam expected to service said geographic area during said planning interval;
- f) sending said parameter set to said at least one node; and
- g) broadcasting by said at least one node in said associated antenna beam on a broadcast channel, said parameter set wherein subscriber units containing said temporarily inhibited class identifiers are prevented from accessing said communication system, and

wherein the forming step varies said set of said inhibited class identifiers to include other regular user class identifiers of said plurality of regular user class identifiers.

**2.** A method as claimed in claim **1** wherein step "a" further comprises the step of identifying areas likely to exhibit overload by using predicted and historical loading information stored in said communication system.

**3.** A method as claimed in claim **1** further comprising the step of adding geographic areas likely to exhibit overload based on operator input.

**4.** A method as claimed in claim **1** wherein said forming step further comprises the step of forming a set of inhibited user identifiers using a subscriber database, said subscriber database containing a list of subscriber units associated with said geographic area and including said assigned class identifiers.

**5.** A method as claimed in claim **1** wherein said planning interval repeats on a continuous basis and comprises a fixed period of time ranging between fifteen seconds and five minutes, said method further comprising the step of repeating steps "a" through "g" on a substantially continuous basis for subsequent of said planning intervals.

**6.** A method as claimed in claim **1** wherein said calculating step comprises the step of calculating said proportion of subscriber units based on a number of available of said traffic channels.

**7.** A method as claimed in claim **1** wherein said regular user class identifiers are assigned to each of said subscriber units at random, and said assigned class identifier is embedded within each of said subscriber units, and wherein said special user class identifiers identify an associated subscriber unit as one of a class of special users including either a system test user, a system maintenance user, an emergency service user, or a privileged system user.

**8.** A method as claimed in claim **1** wherein said plurality of nodes are moving with respect to said geographic area and wherein:

a multiplicity of nodes of said plurality of nodes are expected to sequentially service said geographic area; said sending step comprises the step of sending said parameter set to each node of said multiplicity of nodes; and

said broadcasting step occurs when each node of said multiplicity of nodes is servicing said geographic area.

**9.** A method as claimed in claim **8** wherein said parameter set is particular to said geographic area and said broadcasting step includes the step of broadcasting said parameter set by each node of said multiplicity when said each node is servicing said geographic area and not broadcasting said parameter set when said each node is not servicing said geographic area.

**10.** A method of limiting access of subscriber units to a communication system comprised of a plurality of nodes, and each of said subscriber units has one assigned class identifier of a plurality of class identifiers stored therein, said method comprising:

determining class identifiers of said plurality of class identifiers to temporarily inhibit when an available number of traffic channels is below a predetermined threshold; and

broadcasting said temporarily inhibited class identifiers by a node of said plurality of nodes, wherein a subscriber unit that has been assigned one of said temporarily inhibited class identifiers is prevented from requesting access to said communication system.