[0016] The ground terminals 110 can include equipment that permits communication with the satellite 140 via the various spot beams 130, and can be located within the coverage area 120 of at least one spot beam 130. Each ground terminal 110 can be assigned a particular spot beam 130 and include equipment (e.g., an antenna, transceiver, etc.) that can be configured for communication via that assigned spot beam 130. The equipment of each user terminal 110 can, in response to a reassignment message, also be automatically reconfigured for communication with a newly assigned spot beam 130 that can have different beam characteristics (e.g., carrier frequency, polarization, etc.) than the previously assigned spot beam 130. Configuring and reconfiguring the equipment of the ground terminal 110 to can include updating one or more communications settings of the equipment in order to transmit and receive modulated data via the assigned spot beam 130. The communication settings can, for example, one or more of: a particular carrier frequency, a particular polarization orientation, particular packet information (e.g., implemented as a preamble, post-amble, mid-amble, or in any other suitable manner), particular modulation and/or coding schemes, etc.. Typically, the satellite 105 can illuminate a broad geographic region of the Earth using a large number of spot beams 130, and the satellite 105 can maintain a consistent position (e.g., orbital slot) relative to the Earth by maintaining a geostationary orbit. Even though the satellite 105 position can be closely maintained, spot beam 130 pointing errors can result from even small variations in factors, such as satellite attitude, reflector deflection, thermal gradients, thruster firings, and other satellite maneuvering.

[0017] Satellite antennas with higher directionality and larger apertures can be used to produce narrower spot beams 130 illuminating smaller respective coverage areas 120. Narrower spot beams 130 can provide higher gain per spot beam 130, which can produce better signal-to-noise (SNR) ratio at the user terminals and can allow for higher rates of data transfer between the satellite 105 and the ground terminals 110. Also, narrower spot beams 130 can allow for greater frequency reuse, which can provide even greater increases in data throughput of a satellite communications system 100. However, coverage areas 120 of the spot beams 130 can drift from their nominal location over time, and the drifting can have a greater service impact in the context of narrower spot beams 130.

[0018] For example, as illustrated, the satellite 105 can include various physical features used to produce spot beams 130, such as feed structures 140 and reflector structures 150. Movement of the satellite 105 and/or these features within even a few thousandths of a degree (e.g., due to deflections of reflectors 150, changes in satellite 105 attitude, etc.) can cause appreciable drift in the geographic area covered by spot beams 130. A single satellite reflector 150 is often used to produce a large number of spot beams130, such that slight deflection of that single reflector 150 can cause many coverage areas 120 concurrently to drift. Further, satellites 105 having multiple reflectors 150 can experience different deflection for each reflector 150, causing even adjacent coverage areas 120 on the ground potentially to drift in different directions and/or by different amounts. Narrower spot beams 130 are