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(54) Title: LOW EARTH ORBIT SATELLITE CONSTELLATION SYSTEM FOR COMMUNICATIONS WITH RE-USE OF GEOSTATIONARY SATELLITE SPECTRUM

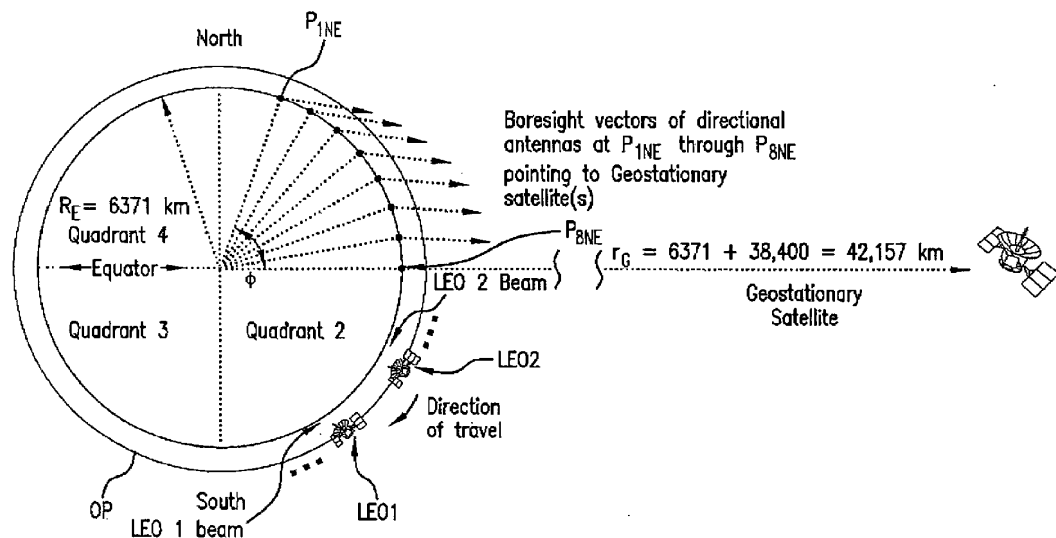


FIG.2

(57) Abstract: A system for re-using GEO-allocated communications spectrum in a LEO satellite constellation based communications system, such that the LEO satellite originated signals will not appear in the beam-width of GEO-pointed earth station antennas, and satellites configured to provide communications by manipulating their respective beam transmissions, which may include a forward beam and rearward beam whose angles are controlled to project the beam and reduce or eliminate the potential for interference with GEO-pointed earth station antennas. The system and LEO satellites may provide substantially 100% coverage of an earth station located anywhere on the surface of the earth, without coordination with the GEO satellites or GEO-pointing ground stations. The system also may provide earth stations that are configured to enhance the isolation between the GEO communications system and the LEO

[Continued on next page]

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