In satellite communication networks, low propagation delay and power requirements increase the plausibility of Low Earth Orbit (LEO) satellites over geostationary Earth Orbit (GEO) satellites. High relative speed and random direction of motion of LEO satellites provide a serious barrier for their applicability in global wireless communication. The spot beam dynamics of LEO satellites brings about frequent handover of connections between spot-beams for the
Mobile Stations (MS). This paper introduces two handover initiation algorithms with connection control. The angle and the distance between the MS and satellite after a defined sample interval serves as a data set for decision making in these two algorithms. A threshold limit is set in each algorithm (threshold angle and threshold distance) which when crossed results in handoff initiation. The simulations were performed in MATLAB 7.8 where a virtual coded scenario with aid of available data was created and the algorithm was executed in it.

Reference

A Handover Management in LEO Satellite Network using Angular and Distance based Algorithm


Index Terms

Computer Science

Communications

Key words

Threshold Angle

LEO

Iridium-Like Satellite

Global Star-Like

Satellite

Spot beam Handover
Foot beam