

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
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A NOVEL PROPOSAL OF ARCHITECTURE AND NETWORK MODEL FOR SPACE  
COMMUNICATION NETWORK

**Abstract**

Due to the limited coverage, weak ability of network expansion and collaborative application of current Geostationary Earth Orbit (GEO) satellite communication systems, A novel architecture of Space Communication Network is proposed in the paper, which composed of GEO satellites, Low Earth Orbit (LEO) satellites and High Altitude Platform Stations (HAPS). In this architecture, we take GEO satellites as the backbone network nodes, LEO satellites as fast response or enhanced coverage nodes, and HAPS to meet the requirement of emergency or hot-spot applications. According to this topology, a routing model based on layered Autonomous Systems (AS) is proposed, which includes routing scheme and protocol stack to solve the problem of different topology dynamics and plug-in-and-play of different kinds of nodes.