SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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SOFTWARE DEFINED ADVANCED FLEXIBLE COMMUNICATIONS AND RELAY GEOSTATIONARY SATELLITE SYSTEM

Abstract

The possibility to adapt in-flight the behavior of a satellite system to different operating condition and /or new functional requirements is of paramount importance in the field of the commercial communications. At the same time, along with the ascension of earth observation with high resolution and high speed broadband satellite communication ability, high speed broadband data transmission of data relay satellite system is more and more urgent. Software defined radio (SDR) concept can bring a high degree of flexibility for the satellite communication system, and the laser relay technique can solve the high-speed transmission of large data requirements. We propose an innovative global communications and relay (GCR) satellite system, which composes 4-5 satellites and can meet the requirement for the global satellite communications. The GCR satellite system bases on the techniques of software defined radio, laser relay, flexible geostationary satellite platform, etc. Such new spacecraft program can be enabled the flexible communications capacity trough Multi footprint shaping and steering, flexible coverage adjustment, power and frequency configurability in Ku/Ka bands to satisfy the efficient and flexible requirements. Further more, it can provides the ability at speeds of around 5Gbps for the inter-satellite transmission.