

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
Fixed and Broadcast Communications (2)

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HYBRID KA AND KU BAND SATELLITE COMMUNICATION SYSTEM FOR BROADBAND AND  
BROADCAST APPLICATIONS**Abstract**

The ever-growing broadband internet connectivity requirements for both B2B and B2C applications are driving the demand for High Throughput Satellite (HTS) systems. These systems operate in Ka band and use multiple spot beams enabling frequency reuse between spot beams. The combination of high gain spot beams and large-scale frequency reuse provide high EIRP and bandwidth resulting in high throughput of the system. HTS systems are also moving towards second generation technologies. While the demand for broadband connectivity is growing, the requirements of TV delivery directly to home are substantial and still growing. Conventional Ku band Direct to Home (DTH) platforms as well as Internet-based Over The Top (OTT) opportunities are of importance to subscriber-based broadcasting and content delivery (CD) Networks. It is also being increasingly felt that addition of a multicast component to a broadband system to deliver common content to large number of subscribers in the system can substantially reduce the throughput requirement on a broadband satellite communication system. A hybrid Ka and Ku band GSO satellite communication system can be optimized to meet the requirements of both broadband and broadcast requirements. This paper provides system design aspects of such a satellite system with certain assumptions on requirements for broadband and broadcast services.