

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

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EMERGING COMPETITIVE REGIONAL AND GLOBAL SATELLITE BASED IP CORE AND
BROADBAND ACCESS NETWORKS**Abstract**

Presently efforts are under way for achieving high throughput satellite systems in Ku and Ka bands through GSO satellites and LEO/MEO satellite constellations for IP Core and Broadband Access applications. These efforts aim to achieve throughput of about 1TBPS for GSO based satellite system and 10 TBPS for LEO satellite constellation based system. Proposals are also being made for augmentation of such systems by introducing communication payloads in higher frequency bands like Q, V and W for Gateway or Feeder links. The new systems include inter satellite links among GSO, LEO and MEO satellites. These systems overcome the limitations of conventional satellite systems in terms of capacity and latency thereby becoming competitive with terrestrial broadband wireless systems and opening up new possibilities. In view of the advances that are taking place in space and ground segment as well as in networking technologies, the trend is towards global satellite systems with international participation on the envisaged requirements. However, apart from global systems, efforts are also being put for implementing regional satellite based IP Core and Broadband Access Networks in certain regions. These satellites systems try to apply scale of economy and thereby achieve optimum use of spectrum, satellite capacity and other resources. This paper discusses emerging trends of satellite based IP Core and Broadband Access Networks. Systems using combinations of GEO and MEO/LEO orbits are also briefly addressed. The need for technical, operational and regulatory environment conducive for implementation of such global and regional satellite systems is also discussed.