

ABSTRACT

Embodiments provide in-flight configuration of satellite pathways to flexibly service terra-link and cross-link traffic in a constellation of non-processed satellites, for example, to facilitate flexible forward-channel and return-channel capacity in a satellite communications system. For example, each satellite in the constellation can include one or more dynamically configurable pathway, and switching and/or beamforming can be used to configure each pathway to be a forward-channel pathway or a return-channel pathway in each of a number of timeslots according to a pathway configuration schedule. At least some of the pathways can be further selectively configured, in each timeslot, to carry "terra-link" traffic to and/or from terrestrial terminals and "cross-link" traffic to and/or from one or more other satellites of the constellation.

[Figure 1]