

Long Term Evolution Multiple-Input Multiple-Output Network in Unmanned Air Vehicles Platform

Authors : Ashagrie Getnet Flattie

Abstract : Line-of-sight (LOS) information, data rates, good quality, and flexible network service are limited by the fact that, for the duration of any given connection, they experience severe variation in signal strength due to fading and path loss. Wireless system faces major challenges in achieving wide coverage and capacity without affecting the system performance and to access data everywhere, all the time. In this paper, the cell coverage and edge rate of different Multiple-input multiple-output (MIMO) schemes in 20 MHz Long Term Evolution (LTE) system under Unmanned Air Vehicles (UAV) platform are investigated. After some background on the enormous potential of UAV, MIMO, and LTE in wireless links, the paper highlights the presented system model which attempts to realize the various benefits of MIMO being incorporated into UAV platform. The performances of the three MIMO LTE schemes are compared with the performance of 4x4 MIMO LTE in UAV scheme carried out to evaluate the improvement in cell radius, BER, and data throughput of the system in different morphology. The results show that significant performance gains such as bit error rate (BER), data rate, and coverage can be achieved by using the presented scenario.

Keywords : LTE, MIMO, path loss, UAV

Conference Title : ICCWNC 2016 : International Conference on Cognitive Wireless Networks and Communications

Conference Location : London, United Kingdom

Conference Dates : August 25-26, 2016