Document details

APWiMob 2015 - IEEE Asia Pacific Conference on Wireless and Mobile
7 January 2016, Article number 7374961, Pages 223-228
IEEE Asia Pacific Conference on Wireless and Mobile, APWiMob 2015; The Trans Luxury HotelBandung; Indonesia; 27 August 2015 through 29 August 2015; Category numberCFP1575X-ART; Code 119003

Design and simulation of LTE radio system for broadband wireless access in central Phnom Penh (Conference Paper)

Seven, S., Astuti, R.P., Prasetya, B.

[a]Telkom University, National Polytechnic Institute of Cambodia, Bandung, Indonesia
[b]School of Electrical Engineering, Telkom University, Bandung, Indonesia
[c]Telkom University, National Polytechnic Institute of Cambodia, Phnom Penh, Cambodia

Abstract

The most up-to-date application and many numbers of users need higher access speeds and lower latency of wireless communication. As a result, mobile companies need more capacity and higher efficiency to give the high quality service to the customers. LTE has been designed to get broader channels up to 20MHz, with low latency and packet optimized radio access technology. The peak data rate envisaged for LTE is 100 Mbps in downlink and 50 Mbps in the uplink. To support the simultaneous use of legacy and new systems, mobile companies need to give a better radio system, especially in central Phnom Penh city of Cambodia. The purpose of this study aims to designs, simulates, analyzes and expose the state of the art of map planning LTE radio system. Special focus is laid on radio link budget along with broad coverage area and capacity. The outcomes cover the interference limited coverage calculation, the traffic capacity calculation and radio frequency assignment. The implementation is attained on the software platform for the LTE Radio Planning and also can see the simulation antenna in Google Earth. The study will show a detailed LTE radio dimensioning procedure such as coverage area and capacity in Phnom Penh city. The simulation and analysis of the coverage by signal level and overlapping zone also a part of this work. © 2015 IEEE.

SciVal Topic Prominence

Topic: Long Term Evolution (LTE) | Synchronization | cell search

Prominence percentile: 70.310

Author keywords

Capacity | Cost 231-Hata | Coverage area | Long Term Evolution | MIMO

Indexed keywords

Engineering controlled terms: Budget control | Computer software | Image resolution | Legacy systems | Long Term Evolution (LTE) | MIMO systems | Mobile radio systems | Mobile telecommunication systems | Radio links | Radio systems | Telecommunication industry

Engineering uncontrolled terms: Broadband wireless accesss | Capacity | Coverage area | Design and simulation | High quality service | Radio access technologies | Simulation and analysis | Wireless communications

Engineering main heading: Wireless telecommunication systems

ISBN: 978-147998290-5
Source Type: Conference Proceeding
Original language: English

DOI: 10.1109/APWiMob.2015.7374961
Document Type: Conference Paper
Sponsors: IEEE Communications Society Indonesia Chapter
Publisher: Institute of Electrical and Electronics Engineers Inc.