

A Moving Cell Bearer Management Architecture for LTE-Advanced System

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Abstract— Mobile data traffic has been predicted to grow exponentially in the next several years due to recent increased penetration of mobile devices running a vast array of mobile applications. Moving cell is a concept to further evolve fixed small cell technology for the next generation wireless system which is solved the rapid increase of traffic. It provides a continuous connection to the mobile network and moves around its connection network along to the user. A moving cell in Long Term Evolution-Advanced (LTE-A) cellular network confers a flexibility to the system and allows for a more enhanced mobility management, and supports heterogeneous radio access technologies simultaneously. It can establish the new bearer type for heterogeneous radio access technologies and improve the quality of service for user and to provide high data rate, low delay, and low power consumption for user mobile equipment. In this paper, we propose a moving cell bearer control mechanism and the architecture of moving cell supported by a LTE-A system for 5 Generation. The cellular network needs to establish a new type of the Evolved Packet System (EPS) bearer for WiFi radio bearer of the moving cell. We describe the entities of this architecture, the protocol stack and describe how user bearers setup.

Keyword— Moving cell, LTE-A



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