

An energy saving scheme for key management protocol in IEEE802.16e

ABSTRACT

In IEEE 802.16e, energy management is an important factor to be emphasized especially for Mobile Stations (MSs) due to their limitation on battery capabilities. Efficient energy scheme would guarantee long lifetime for MSs. In WiMAX service, the Base Station (BS) sends security keys to MSs using key management scheme, and MSs need to perform ciphering operations to get access to the security keys for further processing. In this way, performing high ciphering operations by MSs require more energy. This paper proposes an Efficient Key Management Scheme (EKMS) using complete binary tree structure to mitigate this issue, this is done by reducing energy consumption of MSs needed to execute key management process. Analysis shows that EKMS save energy in MSs during key management.

Keyword: IEEE 802.16; Key management; Energy