

ABSTRACT

In the process of sending packages, an adequate source is needed to ensure the delivery of the package from the sending station to the receiving station. With traffic information with a high mobility scale, powerful performance is needed that guarantees the sending and receiving stations of the packet in real-time, reliable, and flexible. The number of stations is often limited on resources such as memory capacity, battery power, and bandwidth. WLAN on IEEE 802.11 standard is a wireless technology that can be one of the solutions to the energy conspiracy problem. IEEE 802.11ah adopts clustering-based MAC protocol to reduce collisions for each group of devices resulting in increased energy consumption. IEEE 802.11ah has Several MAC features are designed to increase the access point (AP) operating range up to 1 km and at the same time energy consumption of each station. RAW mechanism (restricted access window) which is existing in 802.11ah will help set up the grouping scheme of inner stations channel upgrade on each RAW Slot.

Enhanced Distributed Channel Access (EDCA) is an access road that has three parameters that can be used to improve the quality of Service or QoS, namely Arbitration Interface Space (AIFS), Contention Window (CW), and Transmission Opportunity (TXOP). The AIFS parameter is the waiting space between the frames before data transmission. By setting the waiting room according to predetermined access categories can reduce energy consumption at each station. This study will use the integration between station grouping and load balancing scheme with EDCA diagrams.

Keywords: Energy Consumption, 802.11ah, Station Grouping, load Balancing, EDCA