Two-level frames aggregation with enhanced A-MSDU for IEEE 802.11n WLANs

ABSTRACT

IEEE 802.11n defines two schemes of frames aggregation aimed at maximize utilizing WLAN PHY efficiency at MAC level, through sharing headers and timings overheads. Despite their efficiencies in enhancing the MAC throughput, the schemes are characterized with yet other overheads due to the aggregation. Moreover, none of the two schemes is optimal in every condition: Both should work together to achieve this. In this paper, in order to optimize channel's bandwidth utilization, we proposed an enhanced A-MSDU with minimal headers overhead, and an efficient two-level aggregation scheme utilizing the enhanced A-MSDU. Results from the simulation show superiority of the proposed two-level aggregation in respect of throughput and overall channel utilization.

Keyword: Two-level aggregation; Enhanced A-MSDU; A-MSDU; A-MPDU; 802.11n; Aggregation scheme