

Frame aggregation in wireless networks: techniques and issues

ABSTRACT

The timing and headers overheads of IEEE 802.11 PHY and MAC layers consume a large part of the channel time leading to performance degradation especially at higher data rates. Several enhancements at both the PHY and MAC layers have been proposed in order to reduce these overheads and increase the channel utilization. A key enhancement is frame aggregation in which the timing and headers overheads are reduced by aggregating multiple frames into a single large frame and then transmit it in a single channel access. This paper addresses the frame aggregation techniques that have been proposed for the next generation wireless networks and the aggregation techniques that are adopted by IEEE 802.11n standard. It also high-lights the aggregation issues that need to be investigated in order to further enhance the frame aggregation performance.

Keyword: 802.11n; Frame aggregation; Next generation wireless networks; Throughput enhancements; Throughput limits