Method for Leader Beacon Group Selection during Beacon Group Merging in decentralized Wireless Networks

Abstract

In decentralized wireless network, where every device performs their own distributed beaconing procedure, one of the methods to organize beacon transmission is to collectively define a beacon period (BP) among a group of device for all these devices to broadcast their beacon. However, different such groups, known as beacon groups (BGs) may be formed and come into radio range. In such cases, coexistence of these independent BGs poses a problem for decentralized network implementation. In such situations, these BGs may be coalesced into one single BG to solve problems associated in managing the coexistence of multiple BGs in the same wireless space. One example is in the Multi-band OFDM Alliance (MBOA) MAC v0.6 draft specifications where devices belonging to different BGs are mandated to coalesce into a single BG. In coalescing into a single BG, one major problem is to first decide which BG should coalesce and which BG should remain unchanged. This invention describes a method to select a BG that all other BGs shall coalesce to base on the combination of BG size and relative age information. By using the BG size as one of the selection criteria, it reduces the possibility of inducing unwanted situations where a big BG is required to merge into a smaller BG. In addition, the relative age of a BG is also taken into consideration based when the exact BG size cannot be determined.

Fig 7