IEEE 802.19.1a
Wireless Coexistence

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| Text proposal on the coexistence management considering spectrum release  |
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Abstract

This contribution provides text proposals for coexistence management considering spectrum release based on 802.19.1 standard and approved text.

1. Coexistence mechanisms and algorithms
	1. Coexistence algorithms
		1. Coexistence decision algorithms

***Insert the following text***

7.2.2.x Coexistence management considering spectrum release

7.2.2.x.1 Introduction

A CM can manage both high priority and low priority GCOs. To protect the high priority GCOs, the CM calculates the aggregate interference from the low priority GCOs. Based on the result, the CM can decide the spectrum utilization of the low priority GCOs. When one of the low priority GCO finishes the spectrum utilization before the validity time of the available spectrum, this spectrum resource can be released. In such situation, the aggregate interference at the reference point of the high priority GCOs is reduced. The reutilization of the released spectrum builds on the relationship of the spectrum utilization and the contribution to the total interference at the reference point.

7.2.2.x.2 Relationship of spectrum release and spectrum reuse

Figure XX describes an illustrative model for the low priority spectrum utilization management considering the aggregate interference to the high priority user. When the low priority GCO B releases the spectrum stops using spectrum. The interference it contributed to the reference points of low priority GCOs A and B disappear. The spectrum released by the low priority GCO B can be used directly. Instead the spectrum utilization of low priority GCOs A and B can be increased to a level where the increased aggregate interference at the reference points is smaller than the amount of interference reduction due to the spectrum release by low priority GCO B.



Figure system scenario of low priority GCO management with interference to high priority GCO

7.2.2.x.3 Algorithm description

The flowchart is shown in Figure YY. The processes are as follows.

* P#1
P#1 is the 5.2.2.2 Registration update procedure operated at the GCO through which the GCO informs the CM via CE the spectrum release.
* P#2
In this stage the CM obtains the spectrum release notification through the 5.2.2.2 Registration update procedure.
* P#3
In the process, the CM obtains the location of the GCO that releases the spectrum. Since the GCO has previously registered with the CM, the CM can extract the location of the GCO that releases spectrum.
* P#4
In P#4 CM uses the propagation model and the location of the GCO that releases the spectrum as well as the locations of other GCOs and reference point information to calculate that the amount of spectrum that the remaining GCOs can increase.
* P#5
In P#5 the CM makes reconfiguration of the remaining GCOs using 5.2.10.1 WSO reconfigurtion procedure



Figure YY Flowchart of the coexistence management by controlling the number of cochannel GCOs