IEEE P802.19
Wireless Coexistence

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| Why to Change Radio Environment Information Description? |
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Abstract

This document contains explanatory description of radio environment information use. This is a follow-up contribution to discussion on proposed changes to the coexistence protocol messages and related data types in one of the recent TG1 teleconferences.

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# Case Description

Let’s assume two cases shown in figures, 1X and 2X, which are similar from the WSO\_A point of view, but otherwise they are different.

The CE\_A registers to CM1 which gets from the CDIS the coexistence set (CS) of the WSO\_A. The CDIS informs the CM1 about the CS of the CE\_A. It informs also those CMs which serve CEs which belong to the CS of the CE\_A. Thus also CM2 and CM3 receive the CS information from the CDIS.

The CMs, which serve CEs that have interference relationship with the CE\_A, exchange information with the CM1.

# Radio Environment Information Content

## Current Definitions

Main information delivered from the CE\_A point of view as per the current draft is as follows:

* CDIS to CM
	+ Coexistence set (CS): CE\_B, CE\_D (these are coexistence set elements)
	+ CMs serving the coexistence set elements and their contact info
	+ Technology used by the WSOs of the coexistence set elements
	+ Estimate of interference level between WSO\_A - WSO\_B, WSO\_A - WSO\_D and direction/type
* CM to CM
	+ Some general data (in form of reqInfoValue) about the CE\_B and the CE\_D by their CMs to the CM1
	+ Supported frequencies of the CE\_B and the CE\_D to the CM1
	+ Operating resources of the CE\_B and the CE\_D to the CM1
	+ WSO capabilities of the CE\_B and the CE\_D to the CM1 Note! Description of this information is incomplete in the current draft since there is no data type definition.
	+ Subscribed service of the CE\_B and the CE\_D to the CM1

## The Proposal

We propose the following information to be made available for each CM in the exemplary case with focus on the CE\_A:

* CDIS to CM
	+ As of today
* CM to CM
	+ As of today Except that the WSO capabilities need to be defined

Additionally, we propose the following new information to be made available

* + Coexistence set of the CE\_B and the CE\_D
		- Allocations and technology
	+ CM contact info for those coexistence set elements
	+ Other environment information like non 802.19.1 networks/occupancy and free frequency locations

The proposal means in practice the following:

* WSO capabilities are defined while the definition is missing in the current draft
* The CM1 (management service) or the WSO\_A (information service) knows whether the WSO\_B and the WSO\_D able to interfere each other
* The CM1 (management service) or the WSO\_A (information service) knows limitations of the WSO\_B and the WSO\_D (WSO\_C, WSO\_E, unknown network)



Figure 1: Case 1X



Figure 2: Case 2X