IEEE P802.19
Wireless Coexistence

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| Entity specific information storage model |
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Abstract

This document is an IEEE 802.19 TG1 contribution that contains summary description of information entities need to store and maintain in order to be operable part of a coexistence system. Description has been prepared based on certain profiles and especially based on profile O based CE entity description in 19-13/0024r2.. The proposal is to have the description adopted to the 802.19.1 draft as an informative annex.

# Annex C

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(informative)

This informal annex describes stored logical steady information content of IEEE 802.19.1 coexistence system entities assuming profile O based entity implementations. The steady information can be seen as database like information which does not disappear even if the network element is out of order awhile (e.g. temporary power failure).

## Introduction

For each element the information content is presented by hierarchical graph. Special color coding is used to indicate origin of information element as shown in Figure 1 as follows:

**Green** indicates information that is original produced in WSO.
**Red** indicates information that is originally produced in CE.
**Blue** indicates information that is originally produced in CM.
**Orange** indicates information that is originally produced in CDIS.

Black indicates grouping of information or information that an entity generates by itself.
Violet indicates selection of conditional sub-types.



Figure 1: Color coding used in the entity information storage illustrations. Also cardinality relationships are indicated.

## Profile O CE information storage

Structure and content of CE information storage is illustrated in Figure 2. A CE maintains information about every WSO it represents. Additionally, it maintains information about its relationship with the CM to which it is connected and coexistence service information it has exchanged with the CM.



Figure 2: CE information storage structure and content

## Profile O CM information storage

Structure and content of CM information storage is illustrated in Figure 3. A CM maintains information about every CE it serves and about every WSO connected to those CEs. Additionally, it maintains information about operating environment of those WSOs including coexistence sets and some information related to the coexistence set elements (CSE). Each CM maintains also information about those other CMs with which it needs to be in contact with in information change and possibly also in decision making. Similar connectivity information needs to be maintained also on the CDIS to which the CM is connected for coexistence service purposes.

Following terms are used in the CM information storage description when describing what information the CM maintains about a WSO. There are three different types of WSOs from the CM perspective and they are as follows:

* A WSO is called **My WSO**, if it is represented by a CE connected to this CM.
* A WSO is called a **Primary CSE**, if it belongs to a coexistence set of a WSO that is a **My WSO**.
* A WSO is called a S**econdary CSE**, if it is a CSE of a **Primary CSE**.

Depending on actual WSO relation to a CM, a WSO have different information set in the CM. The relation type is indicated by internal “WSO relation to CM” information element. This information element is used as key in conditional branches.

Table 1defines, which WSO specific information a CM maintains for each relation. This is another representation of the information available in Figure 3.

|  |  |  |  |
| --- | --- | --- | --- |
| **DataElements / Relation of WSO** | **My WSO** | **Primary CSE** | **Secondary CSE** |
| WSO ID & WSO operating state and parameters | X | X | X |
| Regulator Constraints | X | X |  |
| WSO Constraints | X | X |  |
| Coexistence Set | X | X |  |
| Radio Environment | X | X |  |
| Subscription & Registration States | X |  |  |
| Discovery Information | X |  |  |
| Radio Measurement Data | X |  |  |
| CM ID |  | X | X |

Table 1: WSO information content according to the WSO relation types to the storing CM.



Figure 3: CM information storage structure and content

## Profile O CDIS information storage

Structure and content of CDIS information storage is illustrated in Figure 4. A CDIS maintains information about every CM it serves and about every coexistence set it has determined for the CMs it serves.



Figure 4: CDIS information storage structure and content