IEEE P802.19
Wireless Coexistence

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| Proposal on new procedure for obtaining resource recommendation |
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Abstract

This document proposes new messages and procedure for a CE to obtain a resource recommendation from the CM in case of information service subscription.

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# Discussion

* In information service, a radio resource recommendation, which may be calculated in accordance with the required link quality and expected network coveragerequest from a CE, seems to be quite useful in supporting efficient operating frequency/channel selection in WSO.
* However, there seems to be no such information available for a WSO in case of information service subscription.
* Currently, there are three kinds of procedures to obtain information and they are as follows:
	+ - 5.2.7.1 Obtaining information from WSO procedure
		- 5.2.7.2 Obtaining information from another CM procedure
		- 5.2.7.3 Sharing coexistence set information procedure

All the above procedures seem to be triggered by a CM, so a new procedure being triggered by a CE/WSO would be necessary for obtaining channel recommendation from the CM in case of information service subscription.

# Proposal

Add the following new procedure description to section 5.2.7 and the subsequent message and data type defintions to sections 5.3 and 5.4 respectively. Additionally, two new primitives are proposed for the COEX\_MEDIA\_SAP to support related information exchange between a WSO and a CE with related datat type definitions for sections 4.2.2 and 4.3 respectively.

**5.2.7 Obtaining information procedures**

**5.2.7.x Obtaining resource recommendation from CM procedure**

This procedure, illustrated in Figure x, is performed when a CE wants to obtain radio resource recommendation (e.g. operating frequency/channel, transmit power, operating schedule) from a CM.



 **Figure x** ・**Obtaining resource recommendation from CM procedure**

**5.3 Messages**

ResourceRecommendationRequest ::= SEQUENCE {

 desiredBandwidth REAL,

 desiredOccupancy REAL,

 desiredMinimumRequiredSINR REAL,

 desiredMinimumRequiredBitRates REAL,

 desiredCoverage REAL

}

ResourceRecommendationResponse ::= SEQUENCE {

 channelRecommendation SEQUENCE OF ChannelRecommendation OPTIONAL,

 freqeuncyRecommendation SEQUENCE OF FrequencyRecommendation OPTIONAL,

**}**

**5.4 Data types**

ChannelRecommendation ::= SEQUENCE {

 chNumber INTEGER,

 -- *A CM may use the priority parameter to assign relative priorities between channel*

*-- recommendations and related operating parameters. The lower the priority parameter*

*-- value given to a channel recommendation compared to the value of another recommendation*

*-- the stronger the recommendation.*

 priority INTEGER OPTIONAL,

 txPowerLimit REAL OPTIONAL,

 txSchedule SEQUENCE OF TxSchedule OPTIONAL

}

FrequencyRecommendation ::= SEQUENCE {

 startFrequency REAL,

 stopFrequency REAL,

 -- *A CM may use the priority parameter to assign relative priorities between operating frequency*

*-- recommendations and related operating parameters. The lower the priority parameter*

*-- value given to a operating frequency recommendation compared to the value of another*

*-- recommendation the stronger the recommendation.*

 priority INTEGER OPTIONAL,

 txPowerLimit REAL OPTIONAL,

 txSchedule SEQUENCE OF TxSchedule OPTIONAL

}

**4.2.2.4 Information exchange service**

**4.2.2.4.12 ResourceRecommendation.request**

This primitive is used by a WSO to request the CE to obtain radio resource recommendation from the CM.

The semantics of this primitive are:

ResourceRecommendations.request (

desiredBandwidth,

desiredOccupancy,

desiredMinimumRequiredSINR,

desiredMinimumRequiredBitRates,

desiredCoverage

)

The primitive parameter is defined in Table x.1.

Table x.1 — ResourceRecommendation.request primitive parameter

|  |  |  |
| --- | --- | --- |
| Name | Data type | Description |
| desiredBandwdith | REAL optional | Desired bandwidth of the resource |
| desiredOccupancy | REAL optional | Desired occupancy of the resource  |
| desiredMinimumRequiredSINR | REAL optional | Desired minimum required SINR in the resource |
| desiredMinimumRequiredBitRates | REAL optional | Desired minimum required bit rates |
| desiredCoverage | REAL optional | Desired network covenerage  |

This primitive is generated by the WSO to request the CE to obtain radio resource recommendation from the CM.

**4.2.2.4.13 ResourceRecommendation.response**

This primitive is used by a WSO to request the CE to obtain radio resource recommendation from the CM.

The semantics of this primitive are:

ResourceRecommendations.response (

channelRecommendation,

frequencyRecommendation

)

The primitive parameter is defined in Table x.2.

Table x.2 — ResourceRecommendation.response primitive parameter

|  |  |  |
| --- | --- | --- |
| Name | Data type | Description |
| channelRecommendation | Sequence of ChannelRecommendation | Radio resource recommendation from the CM when TV channel mode is used in the signaling |
| frequencyRecommendation | Sequence of FrequencyRecommendation | Radio resource recommendation from the CM when frequency mode is used in the signaling |

This primitive is generated by the CE to provide to the WSO the radio resource recommendation which was received from the CM.

**4.3 Data type definitions**

**4.3.2 COEX\_MEDIA\_SAP**

ChannelRecommendation ::= SEQUENCE {

 chNumber INTEGER,

 -- *A CM may use the priority parameter to assign relative priorities between channel*

*-- recommendations and related operating parameters. The lower the priority parameter*

*-- value given to a channel recommendation compared to the value of another recommendation*

*-- the stronger the recommendation.*

 priority INTEGER OPTIONAL,

 txPowerLimit REAL OPTIONAL,

 txSchedule SEQUENCE OF TxSchedule OPTIONAL

}

FrequencyRecommendation ::= SEQUENCE {

 startFrequency REAL,

 stopFrequency REAL,

 -- *A CM may use the priority parameter to assign relative priorities between operating frequency*

*-- recommendations and related operating parameters. The lower the priority parameter*

*-- value given to a operating frequency recommendation compared to the value of another*

*-- recommendation the stronger the recommendation.*

 priority INTEGER OPTIONAL,

 txPowerLimit REAL OPTIONAL,

 txSchedule SEQUENCE OF TxSchedule OPTIONAL

}