IEEE P802.19
Wireless Coexistence

|  |
| --- |
| Profile 3 CDIS |
| Date: 2013-11-13 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Ryo Sawai | Sony corporation |  |  | Ryo.Sawai@jp.sony.com |
| Naotaka Sato | Sony corporation |  |  |  |
| Sun Chen | Sony China |  |  |  |
| Bill Carney | Sony Electronics |  |  |  |
| Tsuyoshi Shimomura | Fujitsu Labs. Limited | 3-2-1 Sakado, Takatsu-ku, Kawasaki, Kanagawa, Japan |  |  |
| Golnaz Farhadi | Fujitsu Labs of America | 1240 E. Arques Avenue M/S 345, Sunnyvale, CA 94085, USA |  |  |

Abstract

This document is a submission to IEEE 802.19 TG1 that contains a description of profile 3 based CDIS.

**Notice:** This document has been prepared to assist IEEE 802.19. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

# Entity operation

If the value of the ***cmProfile*** parameter is equal to ***profile3***, the CDIS shall communicate with this CM as described in subclause 6.2.4.

* + 1. Profile 3
			1. General description

A CDIS that operates as per Profile 3 shall support the following procedures:

* WSO registration
* WSO registration update
* Obtaining coexistence set information



High level flow chart of the CDIS operation is provided in the following figure.

After receiving a CM registration/update request, a CDIS shall correspond to the WSO registration (update) procedure and store/update the subject CM information. When coexistence set information request is received from the subject CM and its operation code shows new or update, CDIS shall correspond to the obtaining coexistence set information procedure. When coexistence set information request is received from the subject CM and its operation code shows delete, CDIS shall check whether or not the number of registered CM is larger than 1. If the number of registered CM is none, the CDIS may stop the operation.

Further procedure specific constraints may apply and if that is the case those are specified in the clauses below.

* + - 1. WSO registration

A CDIS shall perform WSO registration procedure as show in clause 5.2.2.1. The CDIS shall send ***RegistrationResponse*** to the CM when receiving ***CMRegistrationRequest*** from the subject CM.

Table 6.1 – CxMessage fields in RegistrationResponse message

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***header*** | ***CxHeader*** | ***requestID*** |
| ***payload*** | ***CxPayload*** | ***registrationResponse*** |

Table 6.2 – registrationResponse payload element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***status*** | ***CxMediaStatus*** | Status |

* + - 1. WSO Registration update

A CDIS shall perform WSO registration update procedure as shown in clause 5.2.2.2. The CDIS shall send ***RegistrationResponse*** to the CM when receiving ***CMRegistrationRequest*** from the subject CM.

Table 6.3 – CxMessage fields in RegistrationResponse message

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***header*** | ***CxHeader*** | ***requestID*** |
| ***payload*** | ***CxPayload*** | ***registrationResponse*** |

Table 6.4 – registrationResponse payload element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***status*** | ***CxMediaStatus*** | status |

* + - 1. Obtaining coexistence set information

A CDIS shall perform obtaining coexistence set information procedure as shown in clause 5.2.3.1. The CDIS shall send ***CoexistenceSetInformationResponse*** to the CM when receiving ***CoexistenceSetInformationRequest*** from the subject CM.

Table 6.5 – CxMessage fields in CoexistenceSetInformationResponse message

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***Header*** | ***CxHeader*** | ***requestID*** |
| ***Payload*** | ***CxPayload*** | ***coexistenceSetInformationResponse*** |

Table 6.6 – CxMessage fields in CoexistenceSetInformationResponse payload

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***networkID*** | ***OCTET STRING*** | Subject network ID for coexistence set information |
| ***listOfneighborCMs*** | ***ListOfneighborCMs*** | As specified in Table 6.7 |
| ***listOfMasterCMCandidate***  | ***ListOfMasterCMCandidate*** | As specified in Table 6.14 |

Table 6.7 – ListOfneighborCMs parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***cmID*** | ***cxID*** | CM ID |
| ***listOfNeighborCEs*** | ***ListOfNeighborCEs*** | As shown in Table 6.8 |

Table 6.8 – ListOfneighborCEs parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***cmID*** | ***cxID*** | CE ID |
| ***listOfNeighborWSOs*** | ***ListOfNeighborWSOs*** | As shown in Table 6.9 |

Table 6.9 – ListOfneighborWSOs parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***wsoID*** | ***OCTET STRING*** | WSO ID |
| ***networkTechnology*** | ***NetworkTechnology*** | Network technology |
| ***networkGeometryClass*** | ***NetworkGeometryClass*** | As shown in Table 6.12 |
| ***listOfAvailableFrequencies*** | ***ListOfAvailableFrequencies*** | As shown in Table 6.10 |
| ***listOfOperatingFrequencies*** | ***ListOfOperatingFrequencies*** | As shown in Table 6.13 |

Table 6.10 – ListOfAvailableFrequencies parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***frequencyRange*** | ***FrequencyRange*** | Shall be set to indicate the available frequency range. |
| ***txPowerLimit*** | ***REAL*** | Shall be set to indicate the power limit in the available frequency range. |
| ***availableStartTime*** | ***GeneralizedTime*** | Shall be set to indicate start time of the available frequency range if applicable. |
| ***availableDuration*** | ***REAL*** | Shall be set to indicate duration of the available frequency range if applicable. |
| ***aggInterfControlParam*** | ***AggregatedInterferenceControlParameters*** | As specified in Table 6.11 |

Table 6.11 – AggregatedInterferenceControlParameters parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***referencePointID*** | ***INTEGER*** | Reference point ID to be protected in controlling aggregated interference from the other WSO(s) |
| ***geolocation*** | ***Geolocation*** | Geolocation information of the reference point ID |
| ***aCS*** | ***REAL*** | Adjacent Channel Selectivity of the reception to be protected at the reference point if available |
| ***aCLR*** | ***REAL*** | Referenced adjacent channel leakage ratio if available |
| ***antennaHeight*** | ***REAL*** | Potential antenna height of the reception to be protected if available |
| ***antennaGain*** | ***REAL*** | Potential antenna gain of the reception to be protected at the reference point if available |
| ***protection ratio*** | ***REAL*** | Protection ratio of the reception to be protected at the reference point for the frequency if available |

Table 6.12 – networkGeometryClass parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***networkGeometryClass*** | ***INTEGER*** | 0: Network geometry class 11: Network geometry class 22: Network geometry class 33: Network geometry class 44-x: Others |

Table 6.13 – listOfOperatingFreqeuencies parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***frequencyRange*** | ***FrequencyRange*** | Operating frequency range |

Table 6.14 – listOfMasterCMCandidate parameter element

|  |  |  |
| --- | --- | --- |
| *Parameter* | *Data type* | *Value* |
| ***cmID*** | ***cxID*** | CM ID |
| ***ipAddress*** | ***IOAddress*** | IP address of the subject CM |
| ***portnumber*** | ***PortNumber*** | Its port number |