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Wireless Coexistence Working Group

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Re:	
Abstract	Proposal for Chapter 6
Purpose	
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1 **6. Procedures and protocols**

2 **6.1 Procedures**

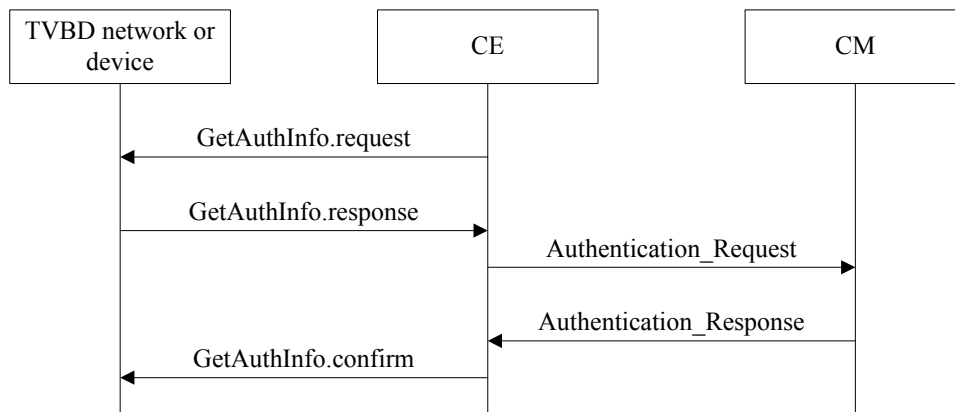
3 **6.1.1 Authentication and deauthentication procedures**

4 This set includes the following procedures:

- 5 — TVBD network or device authentication procedure
- 6 — TVBD network or device deauthentication procedure
- 7 — CM authentication procedure
- 8 — CM deauthenticaiton procedure.

9 **6.1.1.1 TVBD network or device authentication procedure**

10 This procedure is performed when a CE receives a request to start operation. It is shown in Figure 1.



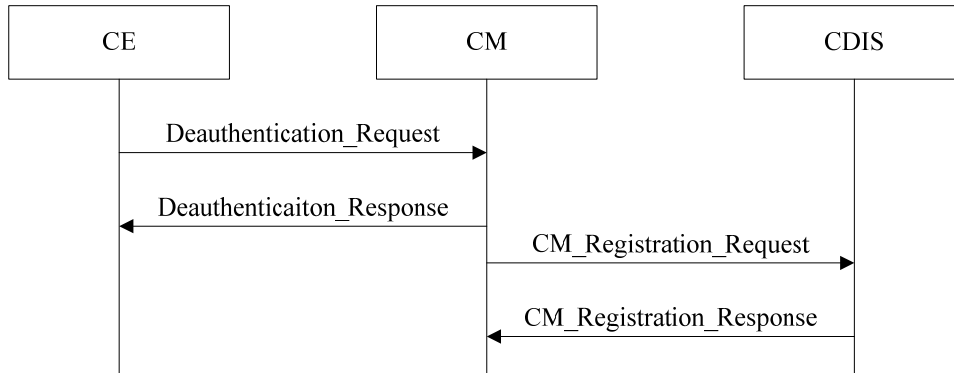
11

12

**Figure 1—TVBD network or device authentication procedure**

13 **6.1.1.2 TVBD network or device deauthentication procedure**

14 This procedure is performed when a CE receives a request to stop operation. It is shown in Figure 2.



1

2

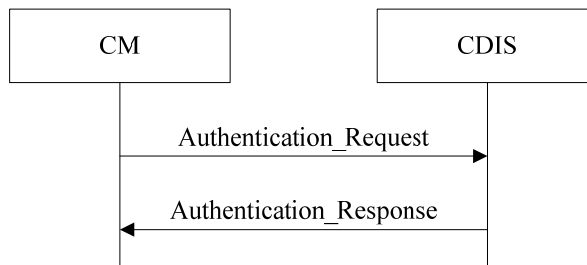
**Figure 2—TVBD network or device deauthentication procedure**

3

**6.1.1.3 CM authentication procedure**

4

This procedure is performed when a CM receives a request to start operation. It is shown in Figure 3.



5

6

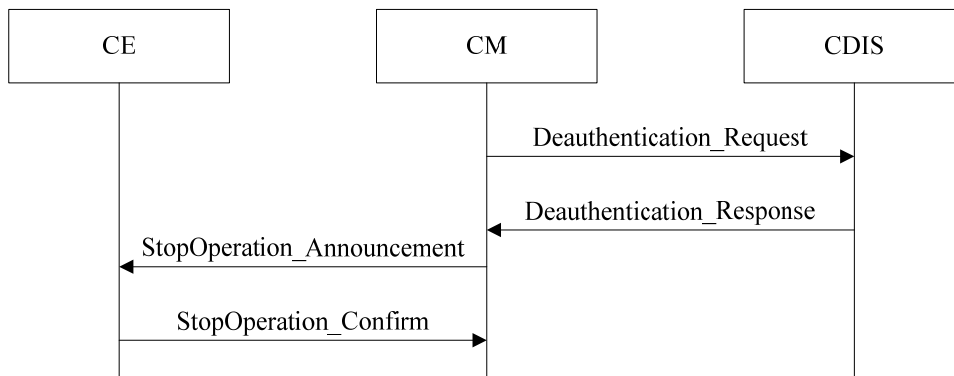
**Figure 3—CM authentication procedure**

7

**6.1.1.4 CM deauthentication procedure**

8

This procedure is performed when CM receives request to stop operation. It is shown in Figure 4.



9

10

**Figure 4—CM deauthentication procedure**

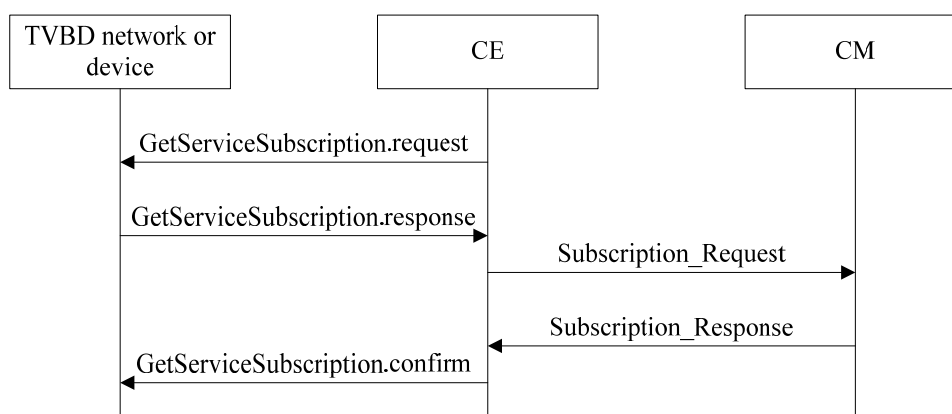
1 **6.1.2 Coexistence service subscription procedures**

2 This set includes the following procedures:

- 3 — TVBD network or device subscription procedure
- 4 — TVBD network or device subscription update procedure
- 5 — CM subscription procedure
- 6 — CM subscription update procedure
- 7 — TVBD network or device subscription change procedure.

8 **6.1.2.1 TVBD network or device subscription procedure**

9 This procedure is performed after the TVBD network or device authentication procedure. It is shown in  
10 Figure 5.

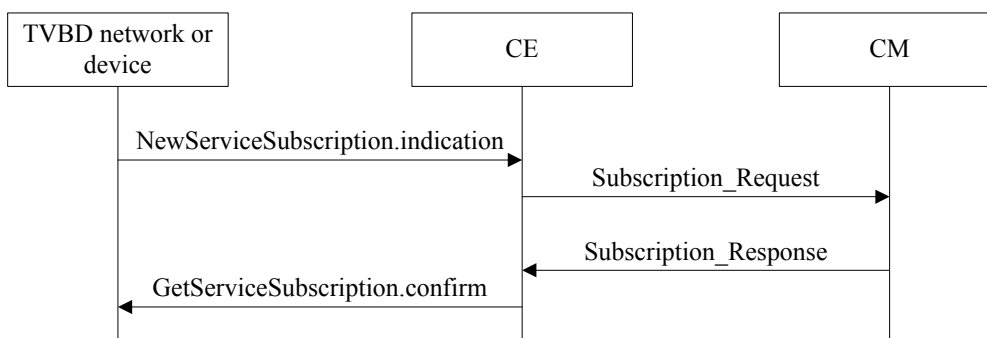


11

12 **Figure 5—TVBD network or device subscription procedure**

13 **6.1.2.2 TVBD network or device subscription update procedure**

14 This procedure is performed when the TVBD network or device wants to change the service it receives  
15 from the coexistence system. It is shown in Figure 6.

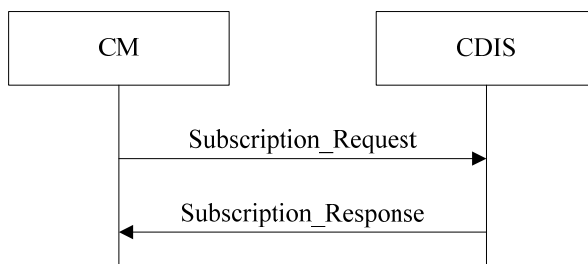


16

1 **Figure 6—TVBD network or device subscription update procedure**

2 **6.1.2.3 CM subscription procedure**

3 This procedure is performed by CM to subscribe to discovery service. It is shown in Figure 7.

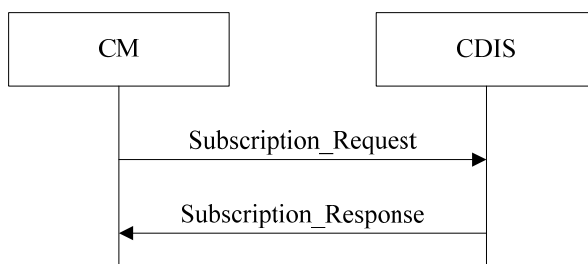


4

5 **Figure 7—CM subscription procedure**

6 **6.1.2.4 CM subscription update procedure**

7 This procedure is performed when CM wants to change the service it receives from the CDIS. It is shown  
8 in Figure 8.

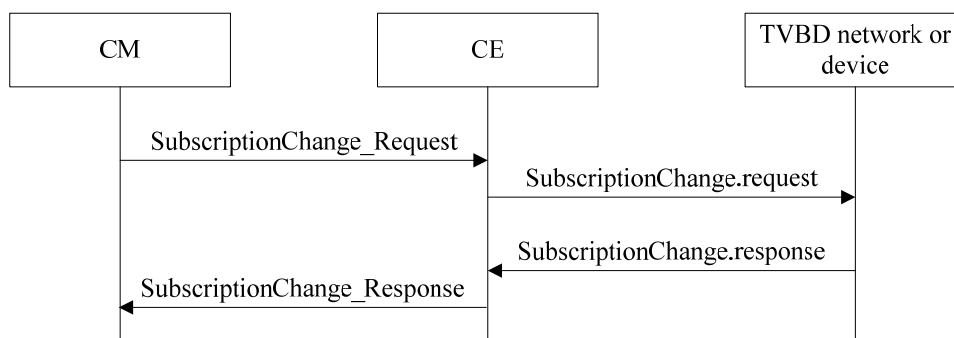


9

10 **Figure 8—CM subscription update procedure**

11 **6.1.2.5 TVBD network or device subscription change procedure**

12 This procedure is performed when CM wants to ask a TVBD network or device to change its subscription.  
13 It is shown in Figure 9.



14

1 **Figure 9— TVBD network or device subscription change procedure**

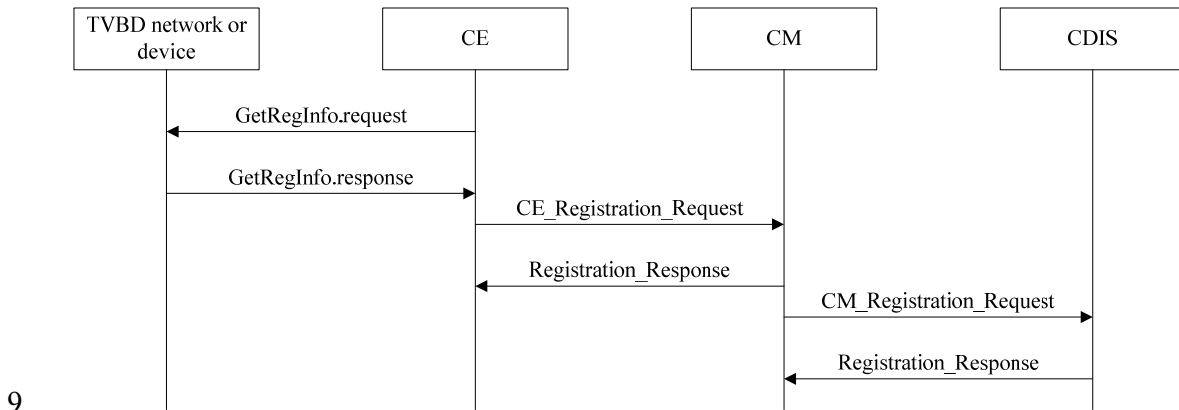
2 **6.1.3 Providing registration information procedures**

3 This set includes the following procedures:

- 4 — TVBD network or device registration procedure
- 5 — TVBD network or device registration update procedure.

6 **6.1.3.1 TVBD network or device registration procedure**

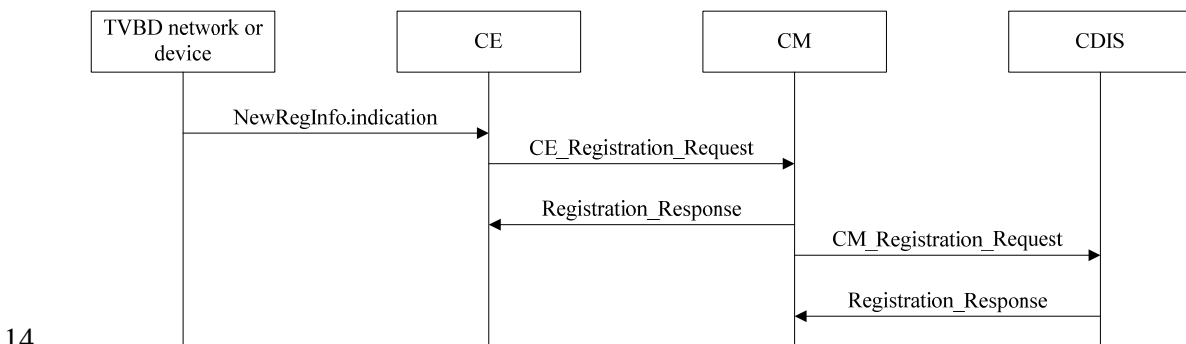
7 This procedure is performed after the TVBD network or device subscription procedure. It is shown in  
8 Figure 10.



10 **Figure 10—TVBD network or device registration procedure**

11 **6.1.3.2 TVBD network or device registration update procedure**

12 This procedure is performed when the TVBD network or device registration information is changed. It is  
13 shown in Figure 11.



15 **Figure 11—TVBD network or device registration update procedure**

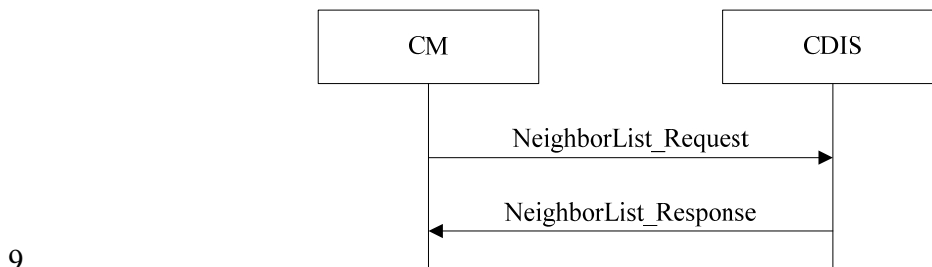
1 **6.1.4 Obtaining neighbor information procedures**

2 This set includes the following procedures:

- 3 — Obtaining neighbor list
- 4 — Obtaining neighbor report
- 5 — Providing neighbor list
- 6 — Providing neighbor report.

7 **6.1.4.1 Obtaining neighbor list**

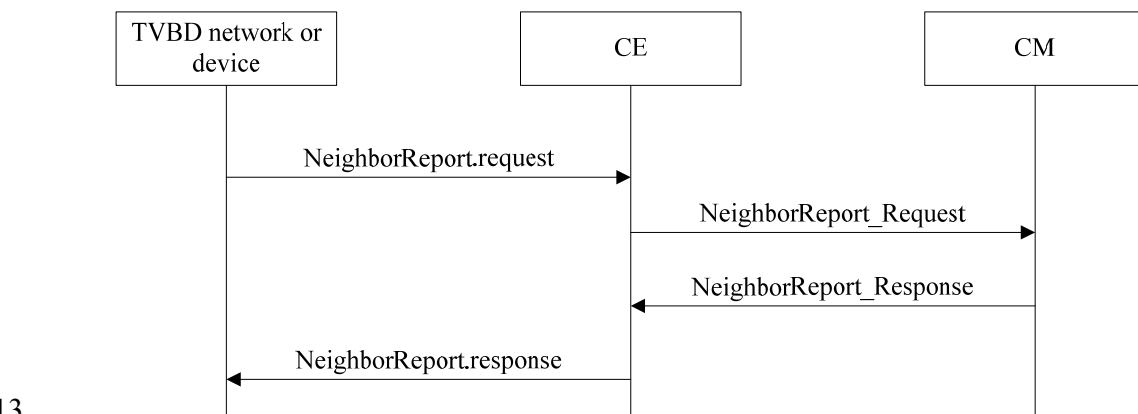
8 This procedure is performed when CM wants to obtain neighbor list from CDIS. It is shown in Figure 12.



10 **Figure 12—Obtaining neighbor list**

11 **6.1.4.2 Obtaining neighbor report**

12 This procedure is performed when TVBD network or device wants to obtain neighbor report from CM.



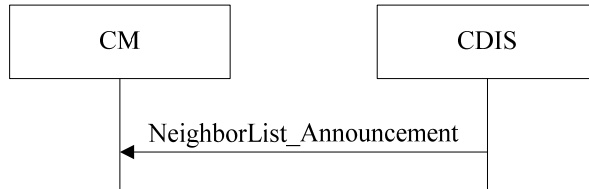
14 **Figure 13—Obtaining neighbor report**



1 **6.1.4.3 Providing neighbor list**

2 This procedure is performed when neighbor information is changed for one or several TVBD networks or  
 3 devices of a CM. It is shown in Figure 14.

4



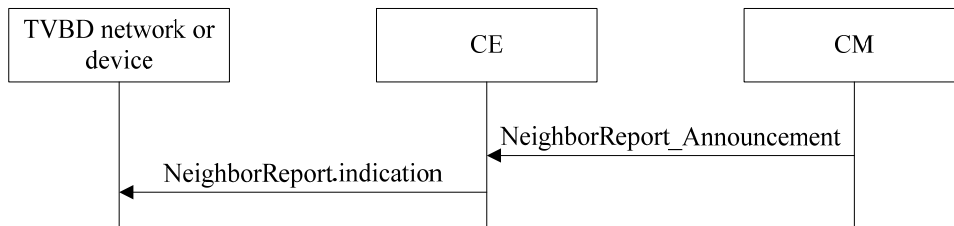
5

6 **Figure 14—Providing neighbor list procedure**

7 **6.1.4.4 Providing neighbor report**

8 This procedure is performed when neighbor information is changed for one or several TVBD networks or  
 9 devices subscribed to the information service. It is shown in Figure 15 with only one CE and TVBD  
 10 network or device illustrated.

11



12

13 **Figure 15—Providing neighbor report procedure**

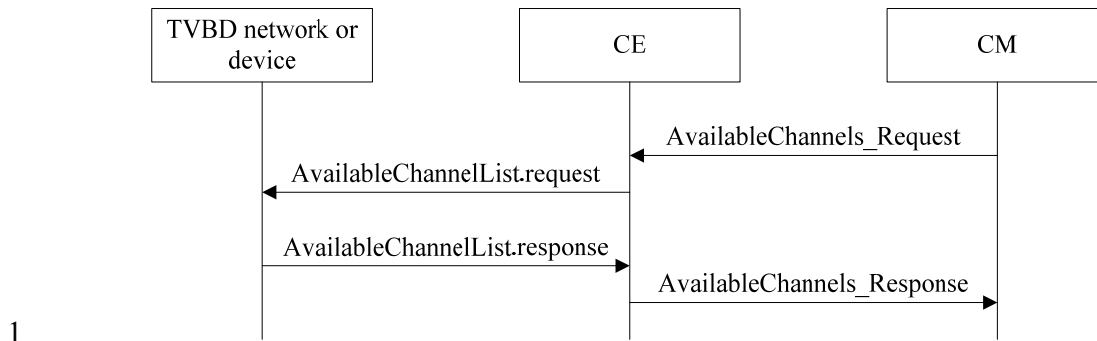
14 **6.1.5 Obtaining available channel list procedures**

15 This set includes the following procedures:

- 16 — Obtaining an available channel list from a TVBD network or device procedure
- 17 — Announcing an available channel list change by a TVBD network or device procedure
- 18 — Obtaining an available channel list from a TVWS database procedure
- 19 — Announcing an available channel list change by a TVWS database procedure.

20 **6.1.5.1 Obtaining available channel list from TVBD network or device procedure**

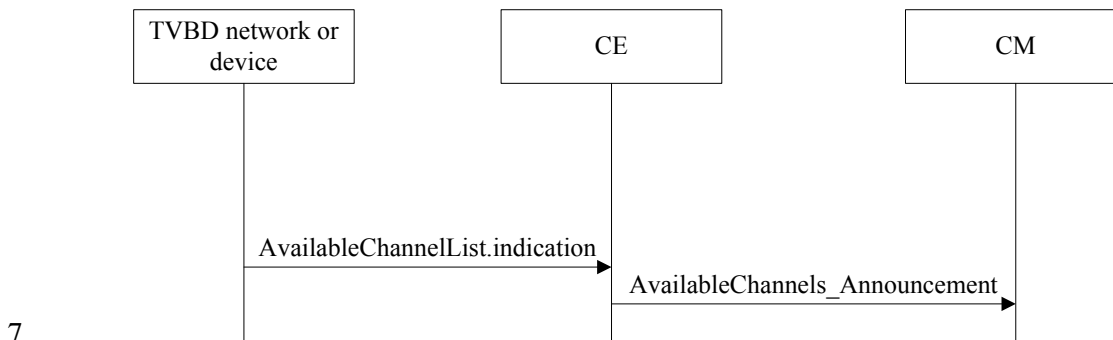
21 This procedure is performed when a CM obtains a list of available channels from a TVBD network or  
 22 device. It is shown in Figure 16.



1  
2 **Figure 16—Obtaining available channel list from TVBD network or device procedure**

3 **6.1.5.2 Announcing available channel list change by TVBD network or device**  
4 **procedure**

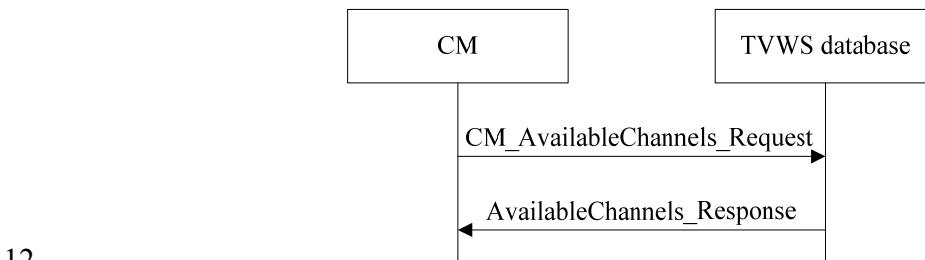
5 This procedure is performed when a CM has previously requested a TVBD network or device to provide a  
6 list of available channels and this list is changed. It is shown in Figure 16.



7  
8 **Figure 17—Announcing available channel list change by TVBD network or device procedure**

9 **6.1.5.3 Obtaining available channel list from TVWS database procedure**

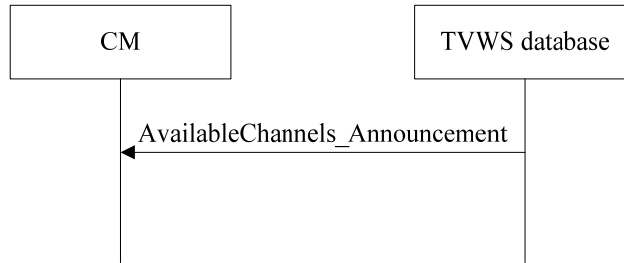
10 This procedure is performed when a CM obtains a list of available channels from a TVWS database. It is  
11 shown in Figure 18.



12  
13 **Figure 18—Obtaining available channel list from TVWS database procedure**

1 **6.1.5.4 Announcing available channel list change by TVWS database procedure**

2 This procedure is performed when a CM has previously requested a TVWS database to provide list of  
 3 available channels and this list is changed. It is shown in Figure 19.



4

5 **Figure 19—Announcing available channel list change by TVWS database procedure**

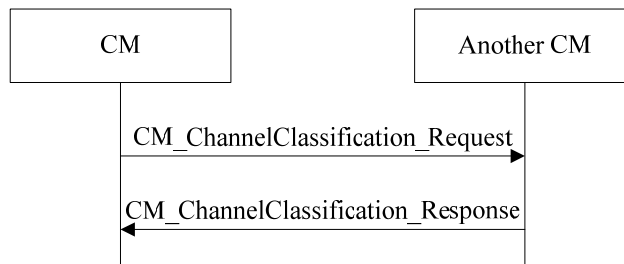
6 **6.1.6 Obtaining channel classification information procedures**

7 This set includes the following procedures:

- 8 — Obtaining channel classification information by CM
- 9 — Obtaining channel classification information by CE
- 10 — Announcing channel classification information update to CM
- 11 — Announcing channel classification information update to CE

12 **6.1.6.1 Obtaining channel classification information by CM procedure**

13 This procedure is used by a CM to obtain channel classification information from another CM.

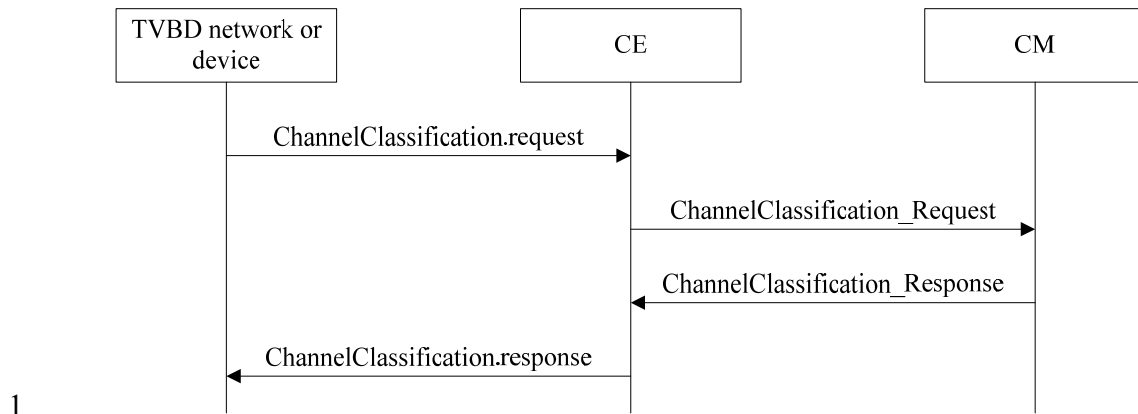


14

15 **Figure 20— Obtaining channel classification information by CM**

16 **6.1.6.2 Obtaining channel classification information by CE procedure**

17 This procedure is used by a TVBD to obtain channel classification information from a CM via a CE.



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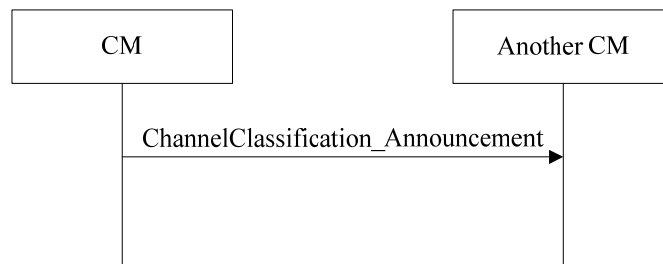
**Figure 21 — Obtaining channel classification information by CE**

3

**6.1.6.3 Announcing channel classification information update to CM procedure**

4

This procedure is used by a CM to announce channel classification information update to another CM.



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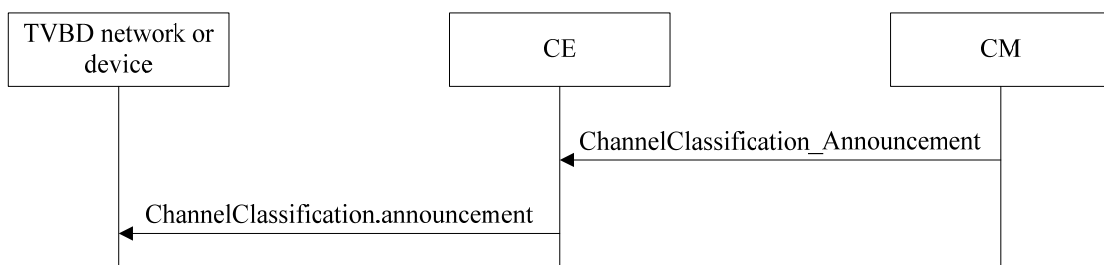
**Figure 22 — Announcing channel classification information update to CM**

7

**6.1.6.4 Announcing channel classification information update to CE procedure**

8

This procedure is by a CM to announce channel classification information update to a CE.



9

10

**Figure 23 — Announcing channel classification information update to CE procedure**

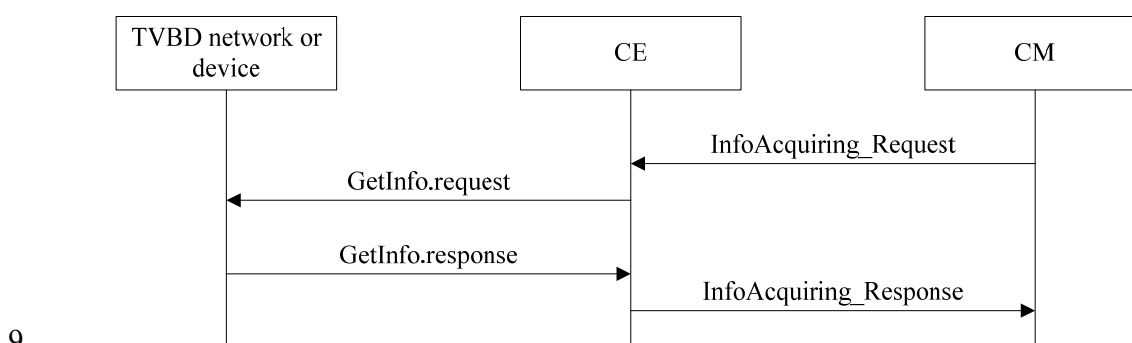
1 **6.1.7 Obtaining information procedures**

2 This set includes the following procedures:

- 3 — Obtaining information from TVBD network or device procedure
- 4 — Obtaining information from another CM procedure
- 5 — Sharing neighbor information procedure.

6 **6.1.7.1 Obtaining information from TVBD network or device procedure**

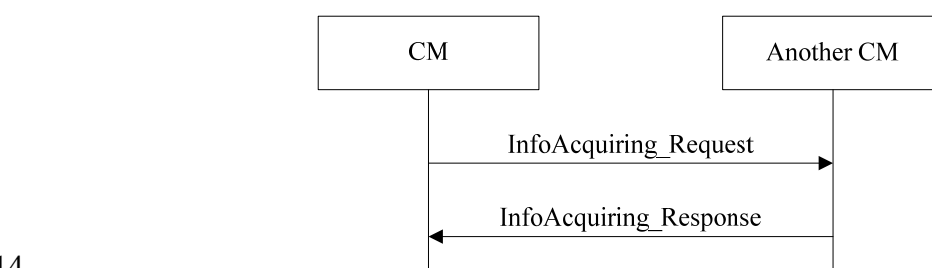
7 This procedure is performed when a CM wants to obtain information from a TVBD network or device. It is  
8 shown in Figure 24.



10 **Figure 24—Obtaining information from TVBD network or device procedure**

11 **6.1.7.2 Obtaining information from another CM procedure**

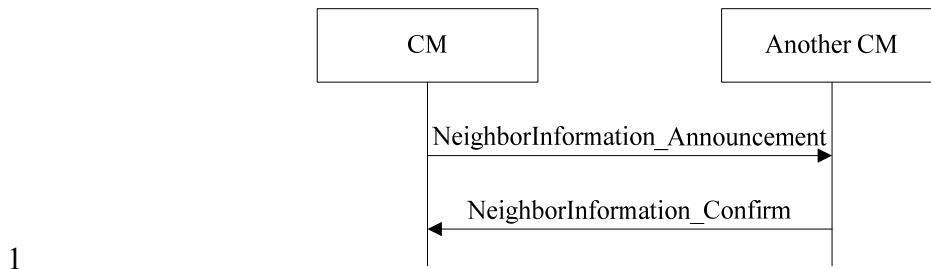
12 This procedure is performed when a CM wants to obtain information from another CM. It is shown in  
13 Figure 25.



15 **Figure 25—Obtaining information from another CM procedure**

16 **6.1.7.3 Sharing neighbor information procedure**

17 This procedure is performed when a CM needs to share TVBD network or device information with another  
18 CM that serves a neighbor TVBD network or device. It is shown in Figure 26.



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**Figure 26—Sharing neighbor information procedure**

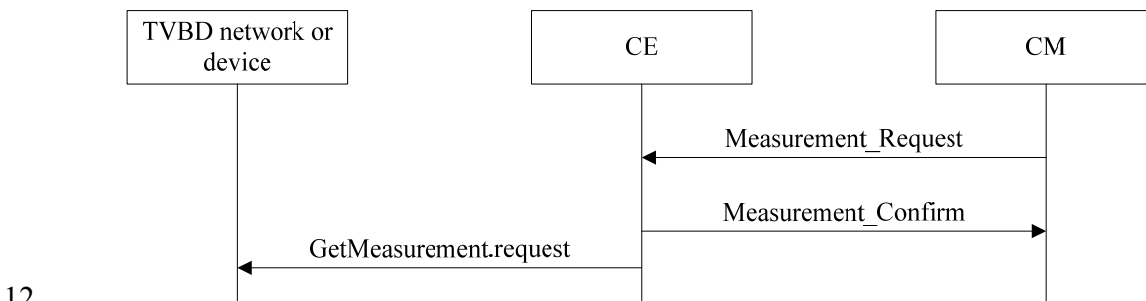
3 **6.1.8 Requesting and obtaining measurement procedures**

4 This set includes the following procedures:

- 5 — Requesting measurement procedure
- 6 — Obtaining one-time measurement procedure
- 7 — Obtaining scheduled measurement procedure.

8 **6.1.8.1 Requesting measurement procedure**

9 This procedure is performed when a CM wants to obtain measurement results from a TVBD network or  
 10 device. The CM requests the TVBD to perform measurements and provide measurement reports either once  
 11 per the request or on schedule basis. The request procedure is shown in Figure 27.



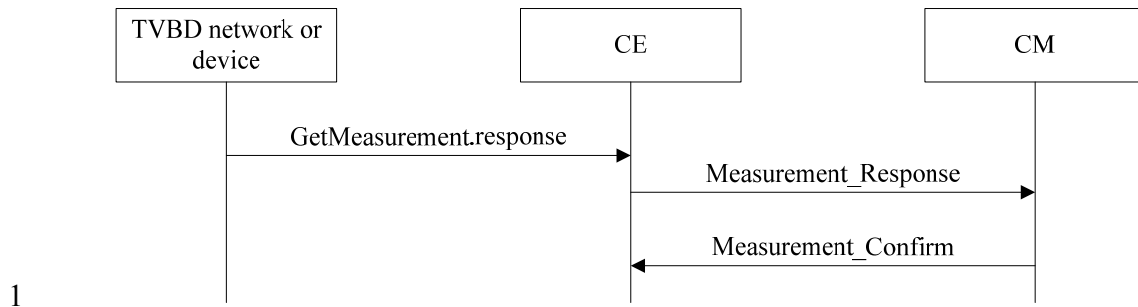
12

13

**Figure 27—Requesting measurement procedure**

14 **6.1.8.2 Obtaining one-time measurement procedure**

15 This procedure is performed when a CM has requested a one-time measurement from a TVBD network or  
 16 device. It is shown in Figure 28.



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2

**Figure 28—Obtaining one-time measurement procedure**

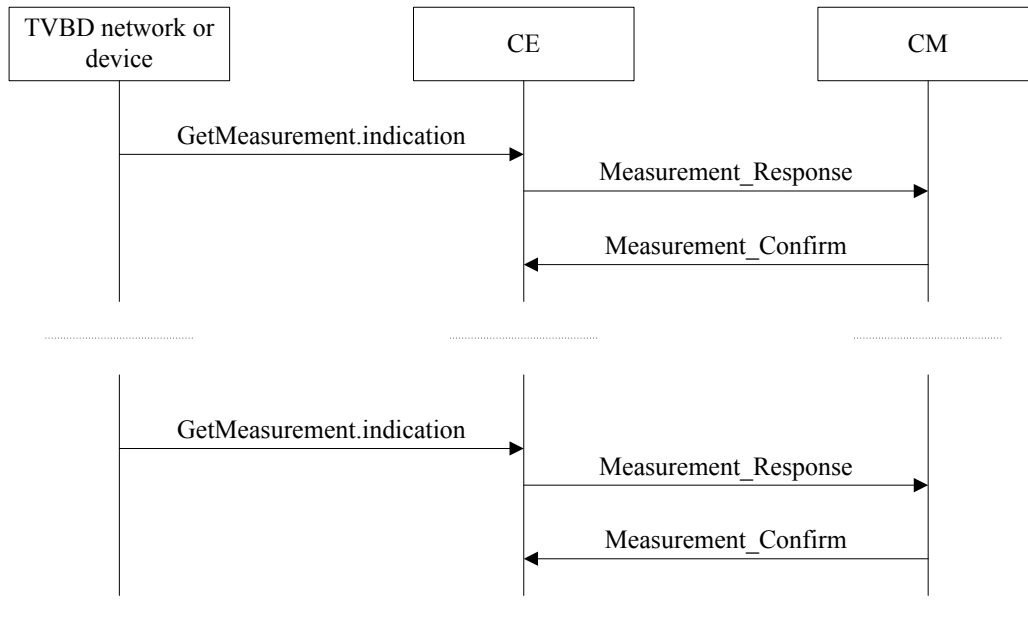
3

**6.1.8.3 Obtaining scheduled measurement procedure**

4

This procedure is performed when a CM has requested scheduled measurements from a TVBD network or device. It is shown in Figure 29.

5



6

7

**Figure 29—Obtaining scheduled measurement procedure**

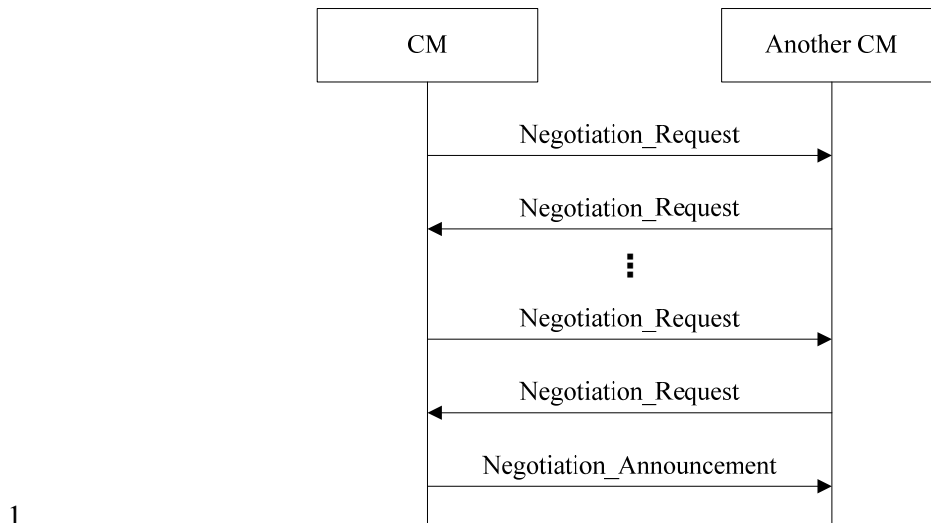
8

**6.1.9 Negotiation between CMs procedure**

9

This procedure is used for coexistence decision making by each CM for distributed topology. It is shown in Figure 30.

10



1

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**Figure 30— Negotiations between CMs**

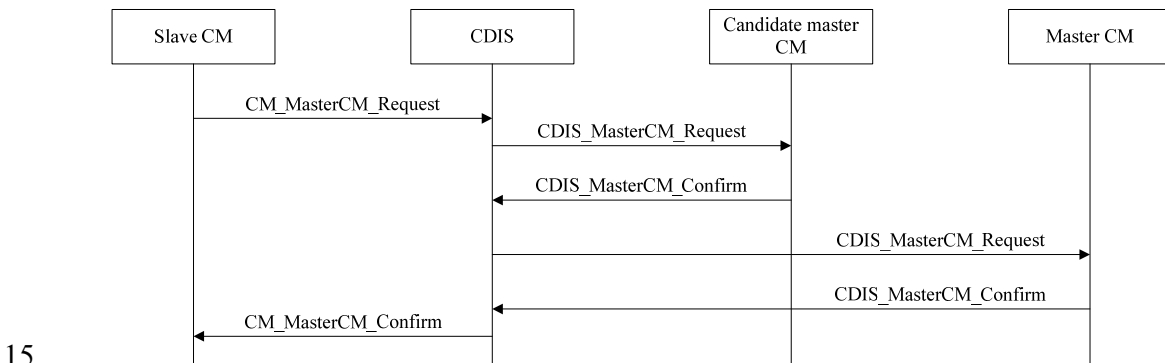
3 **6.1.10 Master CM selection procedures**

4 This set includes the following procedures:

- 5 — Master CM selection by CDIS
- 6 — Master CM selection by CMs
- 7 — Master/slave CM configuration by CDIS
- 8 — Master/slave CM configuration by CMs.

9 **6.1.10.1 Master CM selection by CDIS**

10 This procedure is performed when a CM intends to become a slave CM and requests the CDIS to select a  
 11 master CM. After receiving such request, CDIS selects candidate master CM and sends  
 12 MasterCM\_Request to the selected CM. If confirm message is negative from the selected CM, CDIS  
 13 selects next candidate master CM. If confirm message is positive, CDIS indicates selected master CM to  
 14 the slave CM by sending MasterCM\_Confirm message. The procedure is shown in Figure 31.



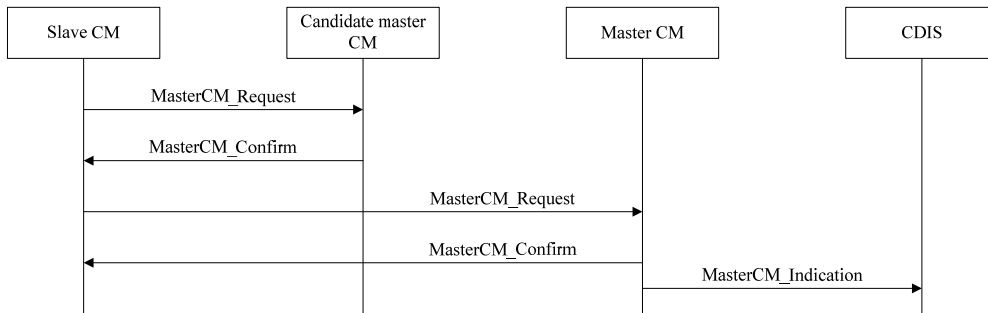
15



1 **Figure 31—Master CM selection by CDIS procedure**

2 **6.1.10.2 Master CM selection by CMs**

3 This procedure is performed when a CM intends to become a slave CM and requests another CM to  
 4 become a master CM. If confirm message is negative from the requested CM, slave CM selects next  
 5 candidate master CM. If confirm message is positive, master CM informs CDIS about new configuration.  
 6 The procedure is shown in Figure 32.

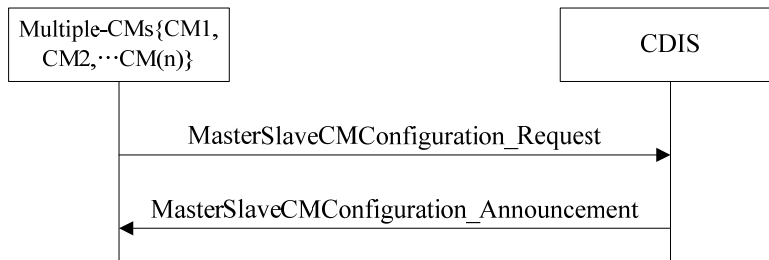


7

8 **Figure 32—Master CM selection by CMs procedure**

9 **6.1.10.3 Master/slave CM configuration by CDIS**

10 This procedure is performed when multiple CMs request CDIS to select master/slave configuration for  
 11 them.

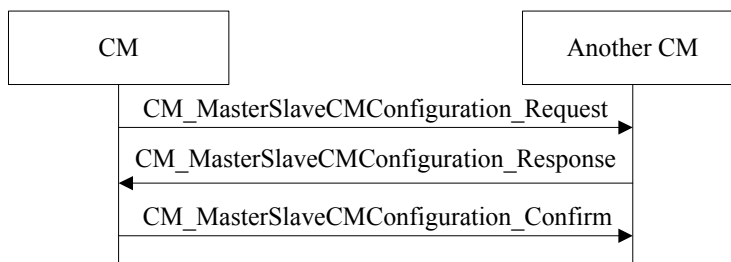


12

13 **Figure 33—Master/slave CM configuration by CDIS**

14 **6.1.10.4 Master/slave CM configuration by CMs**

15 This procedure is performed when one CM asks another CM to select master/slave configuration among  
 16 them.



17

1 **Figure 34—Master/slave CM configuration by CMs**

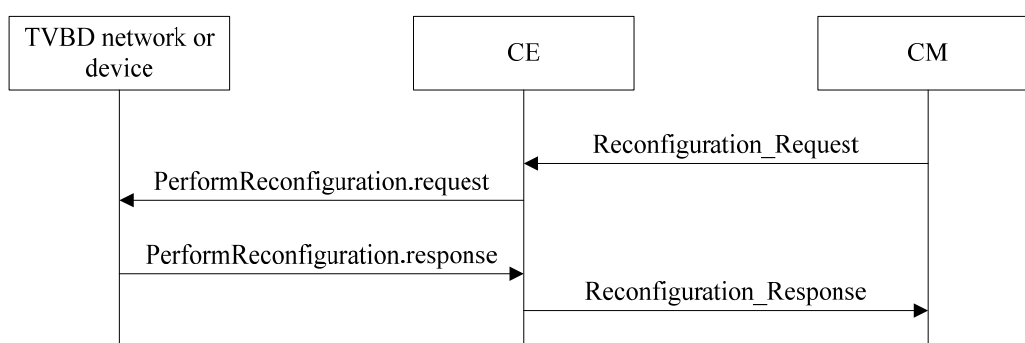
2 **6.1.11 Reconfiguration procedures**

3 This set includes the following procedures:

- 4 — Sending reconfiguration request from CM to CE
- 5 — Sending reconfiguration request from CM to another CM
- 6 — Sending resource reconfiguration request from CE to CM.

7 **6.1.11.1 Sending reconfiguration request from CM to CE**

8 This procedure is performed when a CM has made a coexistence decision that requires reconfiguration of  
 9 the TVBD network or device. It is shown in Figure 35.

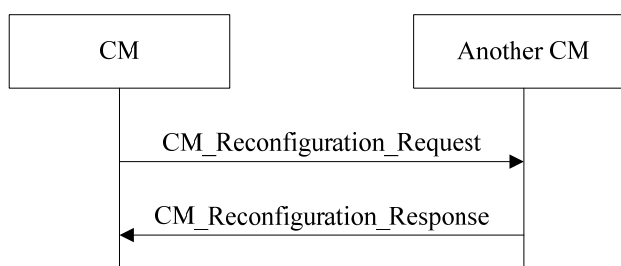


10

11 **Figure 35—Sending reconfiguration request from CM to CE**

12 **6.1.11.2 Sending reconfiguration request from CM to another CM**

13 This procedure is performed when a CM has made a coexistence decision that requires reconfiguration of  
 14 the TVBD network or device. It is shown in Figure 36.

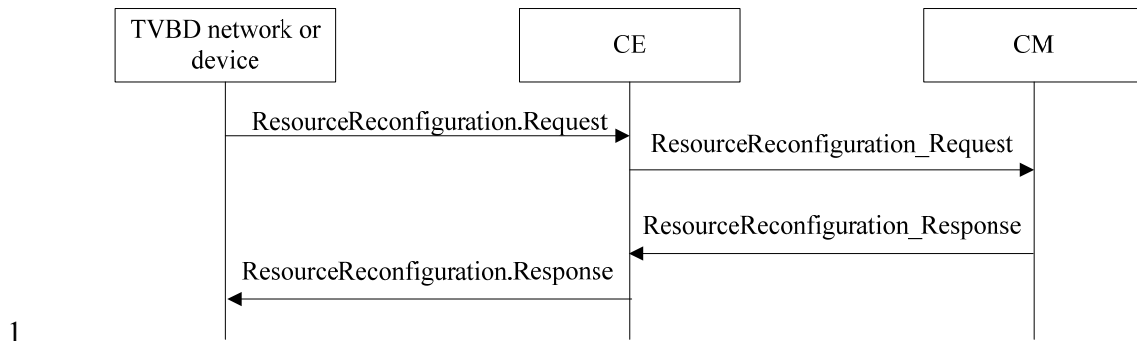


15

16 **Figure 36—Sending reconfiguration request from CM to another CM**

17 **6.1.11.3 Sending resource reconfiguration request from CE to CM**

18 This procedure is performed when a TVBD network or device requires resource. It is shown in .



1

2

**Figure 37 • Sending resource reconfiguration request from CE to CM**

3

**6.1.12 Sending event indication procedures**

4

This set includes the following procedures:

5

— Sending event indication from TVBD network or device to CM

6

— Sending event indication from CM to another CM.

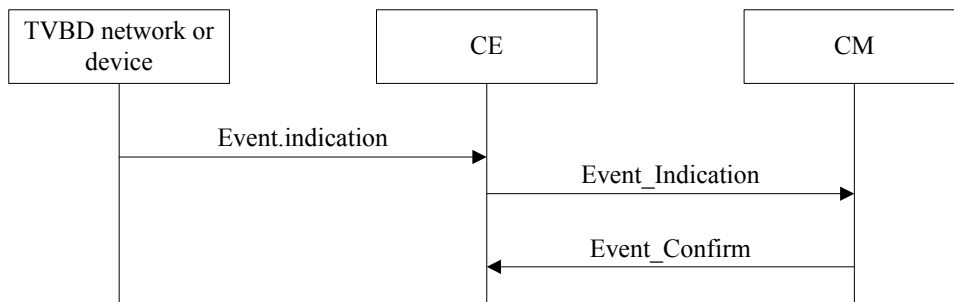
7

**6.1.12.1 Sending event indication from TVBD network or device to CM**

8

This procedure is performed when a TVBD network or device wants to send an event indication to a CM. It is shown in Figure 38.

9



10

11

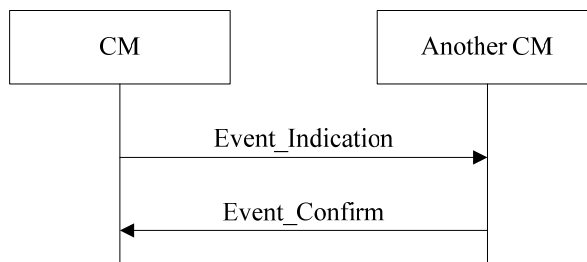
**Figure 38—Sending event indication from TVBD network or device to CM**

12

**6.1.12.2 Sending event indication from CM to another CM**

13

This procedure is performed when a CM wants to send an event indication to another CM. It is shown in .



14

1 **Figure 39—Sending event indication from CM to another CM**

2 **6.2 Messages**

3 **6.2.1 Authentication and deauthentication procedure messages**

4 **6.2.1.1 Authentication\_Request**

5 This message is sent from a CE to a CM to login to the CM. Also, this message is sent from a CM to a  
6 CDIS to login to the CDIS.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID or CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
clientID	IA5String	Client ID (client is a CE or a CM)
clientPassword	IA5String	Client password

7 **6.2.1.2 Authentication\_Response**

8 This message is sent from a CM to a CE to confirm or reject a CE authentication. Also, this message is sent  
9 from a CDIS to a CM to confirm or reject a CM authentication.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID or CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACK Policy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
serverID	IA5String	Server ID (server is a CM or a CDIS)
serverPW	IA5String	Server password (server is a CM or a CDIS)
status	BOOLEAN	Status: successful or not

10 **6.2.1.3 Deauthentication\_Request**

11 This message is sent from a CE to a CM to log off from the CM. Also, this message is sent from a CM to a  
12 CDIS to log off from the CDIS.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>

sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID or CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
Payload		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
clientID	IA5String	Client ID (client is a CE or a CM)
clientPW	IA5String	Client password (client is a CE or a CM)

#### 1 6.2.1.4 Deauthentication\_Response

- 2 This message is sent from a CM to a CE to confirm or reject a CE deauthentication. Also, this message is  
3 sent from a CDIS to a CM to confirm or reject a CM deauthentication.

Header		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID or CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
Payload		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
serverID	IA5String	Server ID (server is a CM or a CDIS)
serverPW	IA5String	Server password (server is a CM or a CDIS)
status	BOOLEAN	Status: successful or not

#### 4 6.2.1.5 StopOperation\_Announcement

- 5 This message is sent from a CM to a CE to notify the CE that the CM stops its operation.

Header		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
Payload		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

#### 6 6.2.1.6 StopOperation\_Confirm

- 7 This message is sent from a CE to a CM to confirm reception of the StopOperation\_Announcement from  
8 the CM.

Header		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID	CX_ID	Source identifier

destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

## 1 6.2.2 Coexistence service subscription procedure messages

### 2 6.2.2.1 Subscription\_Request

- 3 This message is sent from a CE to a CM to subscribe a TVBD network or device to a coexistence service.  
4 Also, this message is sent from a CM to a CDIS to subscribe to a coexistence service.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID or CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
subscribedService	SubscribedService	Subscribed coexistence service

### 5 6.2.2.2 Subscription\_Response

- 6 This message is sent from a CM to a CE to confirm or reject a TVBD network's or device's coexistence  
7 service subscription. Also, this message is sent from a CDIS to a CM to confirm or reject a coexistence  
8 service subscription.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID or CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACK Policy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
status	BOOLEAN	Status: successful or not

### 9 6.2.2.3 SubscriptionChange\_Request

- 10 This message is sent from a CM to a CE to ask a TVBD network or device to change subscription to a  
11 coexistence service.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier =	CX_ID	Destination identifier

CE_ID		
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
newSubscribedService	SubscribedService	Proposed new subscribed coexistence service

#### 1 6.2.2.4 SubscriptionChange\_Response

2 This message is sent from a CE to a CM to confirm or reject changing subscribed service.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACK Policy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
status	BOOLEAN	Status: accepted or not

#### 3 6.2.3 Providing registration information procedure messages

##### 4 6.2.3.1 CE\_Registration\_Request

5 This message is sent from a CE to a CM to register information of a TVBD network or device served by  
6 this CE to the CM. This message is used for initial registration and for registration update.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
SourceIdentifier = CE_ID	CX_ID	Source identifier
DestinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
operationCode	OperationCode	Indicates whether this is a new registration or registration update
networkID	NetworkID	E.g., BSS ID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
networkType	NetworkType	E.g., fixed, mode 2
discoveryInformation	DiscoveryInformation	Information for discovery
ACLR	REAL	Adjacent Channel Leakage Ratio of the TVBD device
ACS	REAL	Adjacent Channel Selection of the receiver
GuaranteedQoSOfBackhaulConnection	GuaranteedQoSOfBackhaulConnection	Guaranteed QoS of backhaul connection in

		the TVBD device
listOfSupportedChNumber	ListOfSupportedChNumber OPTIONAL	List of supported channel number
listOfOperatingChNumber	ListOfOperatingChNumber OPTIONAL	List of operating channel number
listOfSupportedFrequencies	ListOfSupportedFrequencies OPTIONAL	List of supported frequencies
listOfOperatingFrequencies	ListOfOperatingFrequencies OPTIONAL	List of operating frequencies including occupancy information
minTxPower	REAL	Minimum transmission power
txScheduleSupported	BOOLEAN	Indicates whether scheduled transmission is supported or not
networkTechnology ReconfigurationSupported	BOOLEAN	Indicates whether network technology reconfiguration can be requested by CM
addNetworkTechnology	SEQUENCE OF NetworkTechnology	Additional supported network technologies
radioEnvironmentInformation	RadioEnvironmentInformation OPTIONAL	Information on radio environment as observed by this TVBD network or device
requiredResource	RequiredResource	Information on resource required for operation of this TVBD network or device

### 1 6.2.3.2 Registration\_Response

2 This message is sent from a CM to a CE to confirm the registration. Also, this message is sent from CDIS  
3 to CM to confirm the registration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
SourceIdentifier = CM_ID or CDIS_ID	CX_ID	Source identifier
DestinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 4 6.2.3.3 CM\_Registration\_Request

5 This message is sent from a CM to a CDIS to register information of a TVBD networks or devices served  
6 by this CM to the CDIS. This message is used for initial registration, for registration update and to remove  
7 a TVBD network or device from the CDIS. This message includes registration information of one or  
8 several TVBD networks or devices.

<b>Header</b>
---------------



<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
MaximumNumberOfControlableTVBD	INTEGER	Maximum number of controllable TVBD networks or devices
Note: For each TVBD network or device, the information elements below are repeated.		
operationCode	OperationCode	Indicates whether this is new registration, registration update or deletion of a TVBD network or device
networkID	NetworkID	E.g., BSS ID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
networkType	NetworkType	E.g., fixed, mode 2
discoveryInformation	DiscoveryInformation	Information for discovery
ACLR	REAL	Adjacent Channel Leakage Ratio of the TVBD device
ACS	REAL	Adjacent Channel Selection of the receiver
GuranteedQoSOfBackhaulConnection	GuranteedQoSOfBackhaulConnection	Guaranteed QoS of backhaul connection in the TVBD device
listOfSupportedChNumber	ListOfSupportedChNumber OPTIONAL	List of supported channel number
listOfSupportedFrequencies	ListOfSupportedFrequencies OPTIONAL	List of supported frequencies

## 1 6.2.4 Obtaining neighbor information procedure messages

### 2 6.2.4.1 NeighborList\_Announcement

- 3 This message is sent from a CDIS to a CM to provide neighbor information regarding a TVBD network or  
4 device or multiple of them served by this CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each neighbour CM.		
neighbourCMID = CM_ID	CX_ID	Neighbour CM ID
Note: Information elements below are repeated for each neighbour TVBD network or device.		

networkID	NetworkID	E.g., BSSID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
interferenceDirection	InterferenceDirection	Mutual, source or victim
interferenceLevelFromNeighbor	REAL	Estimated worst case interference level caused by the neighbor
interferenceLevelToNeighbor	REAL	Estimated worst case interference level caused by the TVBD network or device for which neighbors are reported
NetworkGeometryClass	NetworkGeometryClass	Network geometry class between a TVBD network and its neighbour TVBD network(s)

### 1 6.2.4.2 NeighborList\_Request

- 2 This message is sent from CM to CDIS to request neighbor information.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfCEID	SEQUENCE OF CX_ID OPTIONAL	CE ID list

### 3 6.2.4.3 NeighborList\_Response

- 4 This message is sent from CDIS to CM to provide neighbor information.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each TVBD network or device.		
CEID	CX_ID	CE ID
Note: Information elements below are repeated for each neighbor CM		
neighborCMID	CX_ID	Neighbor CM ID
Note: Information elements below are repeated for each neighbour TVBD network or device.		
networkID	NetworkID	E.g., BSSID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
interferenceDirection	InterferenceDirection	Mutual, source or victim
interferenceLevelFromNeighbor	REAL	Estimated worst case interference level caused by the neighbor
interferenceLevelToNeighbor	REAL	Estimated worst case interference level caused by the TVBD network or device for which neighbors are reported
NetworkGeometryClass	NetworkGeometryClass	Network geometry class between a TVBD network and its neighbour

		TVBD network(s)
--	--	-----------------

### 1 6.2.4.4 NeighborReport\_Announcement

2 This message is sent from a CM to a CE to provide a neighbor report.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM ID	CX ID	Source identifier
destinationIdentifier = CE ID	CX ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each neighbor TVBD network or device.		
networkID	NetworkID	E.g., BSSID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
interferenceDirection	InterferenceDirection	Mutual, source or victim
interferenceLevelFromNeighbor	REAL	Estimated worst case interference level caused by the neighbor
interferenceLevelToNeighbor	REAL	Estimated worst case interference level caused by the TVBD network or device for which neighbors are reported
listOfOperatingChannelNumber	ListOfOperatingChannelNumber OPTIONAL	List of operating channel number
listOfOperatingFrequencies	ListOfOperatingFrequencies OPTIONAL	List of operating frequencies
radioEnvironmentInformation	RadioEnvironmentInformation OPTIONAL	Radio environment information
NetworkGeometryClass	NetworkGeometryClass	Network geometry class between a TVBD network and its neighbour TVBD network(s)

### 3 6.2.4.5 NeighborReport\_Request

4 This message is sent from CE to CM to request a neighbor report.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE ID	CX ID	Source identifier
destinationIdentifier = CM ID	CX ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 5 6.2.4.6 NeighborReport\_Response

6 This message is sent from CM to CE to provide a neighbor report.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>

sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
Payload		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each neighbor CM		
neighborCMID	CX_ID	Neighbor CM ID
Note: Information elements below are repeated for each neighbor TVBD network or device.		
networkID	NetworkID	E.g., BSSID
networkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
interferenceDirection	InterferenceDirection	Mutual, source or victim
interferenceLevelFromNeighbor	REAL	Estimated worst case interference level caused by the neighbor
interferenceLevelToNeighbor	REAL	Estimated worst case interference level caused by the TVBD network or device for which neighbors are reported
listOfOperatingChannelNumber	ListOfOperatingChannelNumber OPTIONAL	List of operating channel number
listOfOperatingFrequencies	ListOfOperatingFrequencies OPTIONAL	List of operating frequencies
radioEnvironmentInformation	RadioEnvironmentInformation OPTIONAL	Radio environment information
NetworkGeometryClass	NetworkGeometryClass	Network geometry class between a TVBD network and its neighbour TVBD network(s)

## 1 6.2.5 Obtaining available channel list procedure messages

### 2 6.2.5.1 AvailableChannels\_Request

3 This message is sent from a CM to a CE to request an available channel list from the CE.

Header		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
Payload		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 4 6.2.5.2 CM\_AvailableChannels\_Request

5 This message is sent from a CM to a TVWS DB to request an available channel list for a particular TVBD  
6 network or device.

Header		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier =	CX_ID	Destination identifier

TVWSDB_ID		
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
requestedTimeStamp	TIME	Time of the request
deviceFCCID		FCC ID of the TVBD network or device
deviceSN		Serial number of the TVBD network or device
deviceLocation	DeviceLocation	Location of the TVBD network or device
antennaHeight	REAL	Antenna height of the TVBD network or device
networkType	NetworkType	E.g., fixed mode 2
...		

### 1 6.2.5.3 AvailableChannels\_Response

- 2 This message is sent from a CE to a CM to provide an available channel list. Also, this message is sent  
3 from TVWS DB to a CM to provide an available channel list to the CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or TVWSDB_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfAllowedTVWSChNumber	ListOfAllowedTVWSChNumber OPTIONAL	Allowed TVWS channel number list
constOfChUses	ConstOfChUses OPTIONAL	Channel user constraint
Note: Information elements below are repeated for each available frequency.		
startFreq	REAL OPTIONAL	Start frequency
stopFreq	REAL OPTIONAL	Stop frequency
txPowerLimit	REAL OPTIONAL	Transmit power limit
aggregatedInterferenceControlParameters	AggregatedInterferenceControlParameters	Aggregated interference control parameters

### 4 6.2.5.4 AvailableChannels\_Announcement

- 5 This message is sent from a CE/TVWS DB to a CM to provide an available channel list.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or TVWSDB_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		

<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfAllowedTVWSChNumber	ListOfAllowedTVWSChNumber OPTIONAL	Allowed TVWS channel number list
constOfChUses	ConstOfChUses OPTIONAL	Channel user constraint
Note: Information elements below are repeated for each available piece of frequency.		
networkID	NetworkID OPTIONAL	E.g., BSSID
startFreq	REAL OPTIONAL	Start frequency
stopFreq	REAL OPTIONAL	Stop frequency
txPowerLimit	REAL OPTIONAL	Transmit power limit
aggregatedInterference ControlParameters	AggregatedInterference ControlParameters	Aggregated interference control parameters

## 1 6.2.6 Obtaining channel classification information procedure messages

### 2 6.2.6.1 CM\_ChannelClassification\_Request

3 This message is used when a CM wants to obtain channel classification information from another CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfNetworkID	SEQUENCE OF NetworkID	Neighbor network ID list

### 4 6.2.6.2 CM\_ChannelClassification\_Response

5 This message is sent from a CM to another CM to provide channel classification information.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each neighbor TVBD network or device.		
networkID	NetworkID	Neighbor network ID
chClassInfo	ChClassInfo	Channel classification information of neighbor CE

### 6 6.2.6.3 CE\_ChannelClassification\_Request

7 This message is sent from CE to CM to request channel classification information of the CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier

ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfNetworkID	SEQUENCE OF NetworkID	Network ID list

### 1 6.2.6.4 CE\_ChannelClassification\_Response

2 This message is sent from CM to CE to give the channel classification information of the CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each TVBD network or device.		
networkID	NetworkID	Network ID
chClassInfo	ChClassInfo	Channel classification information of the CE

### 3 6.2.6.5 ChannelClassification\_Announcement

4 This message is from CM to another CM to provide updated channel classification information. Also, this  
5 message is sent from CM to CE to provide updated channel classification information.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID or CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each TVBD network or device.		
networkID	NetworkID	Network ID
chClassInfo	ChClassInfo	Channel classification information of the CE

### 6 6.2.7 Obtaining information procedures messages

#### 7 6.2.7.1 InfoAcquiring\_Request

8 This message is sent from a CM to a CE to request the CE to obtain information from the TVBD network  
9 or device. Also, this message is sent from a CM to another CM to request information about neighbor  
10 TVBD networks or devices.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier

destinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
reqInfoDescr	ReqInfoDescr	ID of the requested information

### 1 6.2.7.2 InfoAcquiring\_Response

2 This message is sent from a CE/CM to a CM to provide requested information.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
reqInfoValue	ReqInfoValue	Requested information

### 3 6.2.8 Sharing neighbor information procedure messages

#### 4 6.2.8.1 NeighborInformation\_Announcement

5 This message is sent from a CM to another CM to share information about neighbor TVBD network or  
6 device.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceTVBDIdentifier	CX_ID	CE_ID of the TVBD network or device served by the source CM
sourceNetworkTechnology	NetworkTechnology	E.g., 802.11af, 802.22
networkType	NetworkType	TVBD network or device type
sourceListOfSupportedChannelNumber	ListOfSupportedChannelNumber OPTIONAL	List of supported channel number
sourceListOfOperatingChannelNumber	ListOfOperatingChannelNumber OPTIONAL	List of operating channel number
sourceListOfSupportedFrequencies	ListOfSupportedFrequencies OPTIONAL	List of supported frequencies
sourceListOfOperatingFrequencies	ListOfOperatingFrequencies OPTIONAL	List of operating frequencies
sourceNetworkCapabilities	NetworkCapabilities	Device and network



		capabilities that have an effect on coexistence decision making
sourceSubscribedService	SubscribedService	Coexistence service subscription
managingCM	BOOLEAN	Indicates whether this TVBD network or device shall be managed by source CM or destination CM
chClassInfo	ChClassInfo OPTIONAL	Channel classification information
scheduledTimeEnd	BOOLEAN OPTIONAL	Indicate whether this TVBD network or device finished scheduled time when channel is shared

### 1 6.2.8.2 NeighborInformation\_Confirm

2 This message is sent from a CM to another CM to confirm reception of the  
3 NeighborInformation\_Announcement message.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 4 6.2.9 Requesting and obtaining measurement procedure messages

#### 5 6.2.9.1 Measurement\_Request

6 This message is sent from a CM to a CE to request the CE to request the TVBD network or device to  
7 perform measurements.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
measurementDescription	MeasurementDescription	Measurement description

#### 8 6.2.9.2 Measurement\_Response

9 This message is sent from a CE to a CM to report measurement results.

<b>Header</b>
---------------

<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
measurementResult	MeasurementResult	Measurement results

### 1 6.2.9.3 Measurement\_Confirm

- 2 This message is sent from a CE to a CM to confirm reception of a measurement request. This message is  
3 also sent from a CM to a CE to confirm reception of measurement results.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID or CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 4 6.2.10 Negotiation between CMs procedure messages

#### 5 6.2.10.1 Negotiation\_Request

- 6 This message is sent from a CM to a neighbor CM to negotiate resource usage.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
negotiationStatus	NegotiationStatus	Negotiation status
negotiationInformation	NegotiationInformation	Negotiation information

#### 7 6.2.10.2 Negotiation\_Announcement

- 8 This message is sent from a CM to a neighbor CM to provide negotiation results.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception

<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
listOfWinnerCMID	ListOfWinnerCMID	Winner CM ID list
listOfSlotTimePosition	ListOfSlotTimePosition	Slot time position list

## 1 6.2.11 Master CM selection procedure messages

### 2 6.2.11.1 CM\_MasterCM\_Request

3 This message is sent from a CM that intends to become a slave CM to a CDIS to select a master CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
numberOfTVBDs	INTEGER	Number of TVBDs managed by CM that intends to become slave CM

### 4 6.2.11.2 CM\_MasterCM\_Confirm

5 This message is sent from a CDIS to a slave CM to confirm master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
masterCMID	CX_ID	ID of the CM accepting to be a master CM
status	BOOLEAN	Status: accepted or not

### 6 6.2.11.3 CDIS\_MasterCM\_Request

7 This message is sent from a CDIS to a candidate master CM to request it to become master CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CDIS_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
slaveCMID	CX_ID	ID of the CM that intends to become slave CM

numberOfTVBDs	INTEGER	Number of TVBDs managed by CM that intends to become slave CM
---------------	---------	---------------------------------------------------------------

### 1 6.2.11.4 CDIS\_MasterCM\_Confirm

2 This message is sent from a candidate master CM to a CDIS to confirm master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CDIS_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
status	BOOLEAN	Status: accepted or not

### 3 6.2.11.5 MasterCM\_Request

4 This message is sent from a CM that intends to become a slave CM to a candidate master CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
numberOfTVBDs	INTEGER	Number of TVBDs managed by CM that intends to become slave CM

### 5 6.2.11.6 MasterCM\_Confirm

6 This message is sent from a candidate master CM to a slave CM to confirm master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
status	BOOLEAN	Status: accepted or not

### 7 6.2.11.7 MasterCM\_Indication

8 This message is sent from a master CM to a CDIS to indicate master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier

destinationIdentifier = CDIS ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
slaveCMID	CX_ID	ID of the slave CM

### 1 6.2.11.8 MasterSlaveCMConfiguration\_Request

2 This message is sent from a CM to request CDIS to select master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM ID	CX_ID	Source identifier
destinationIdentifier = CDIS ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

### 3 6.2.11.9 MasterSlaveCMConfiguration\_Announcement

4 This message is sent from a CDIS to CMs to announce master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CDIS ID	CX_ID	Source identifier
destinationIdentifier = CM ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
masterCMID	CX_ID	Master CM ID
slaveCMIDs	SEQUENCE OF CX_ID	List of slave CM IDs

### 5 6.2.11.10 CM\_MasterSlaveCMConfiguration\_Request

6 This message is sent from a CM to request another CM to select master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM ID	CX_ID	Source identifier
destinationIdentifier = CM ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
networkType	NetworkType	TVBD device or network type
geolocation	GEO_LOC	Registered geolocation
channelNumber	INTEGER	Channel number
maximumPowerLevel	REAL	Power limit

channelLoad	REAL OPTIONAL	Expected throughput
sourceCMID	CX_ID	CM identifier
destinationCMID	CX_ID	CM identifier

#### 1 6.2.11.11 CM\_MasterSlaveCMConfiguration\_Response

2 This message is sent from a CM to another CM to announce master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
networkType	NetworkType	TVBD device or network type
geolocation	GEO_LOC	Registered geolocation
channelNumber	INTEGER	Channel number
maximumPowerLevel	REAL	Power limit
channelLoad	REAL OPTIONAL	Expected throughput
masterCMID	CX_ID	CM identifier
slaveCMID	CX_ID	CM identifier

3

#### 4 6.2.11.12 CM\_MasterSlaveCMConfiguration\_Confirm

5 This message is sent from a CM to another CM to confirm master/slave CM configuration.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

#### 6 6.2.12 Reconfiguration procedure messages

##### 7 6.2.12.1 Reconfiguration\_Request

8 This message is sent from a CM to a CE to request reconfiguration of the TVBD network or device served  
9 by this CE.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		

<i>Information element</i>	<i>Data type</i>	<i>Description</i>
reconfigurationRequest	ReconfigurationRequest	Reconfiguration request description
chClassInfo	ChClassInfo OPTIONAL	Channel classification information of the CE

#### 1 6.2.12.2 Reconfiguration\_Response

2 This message is sent from a CE to a CM to report the result of the requested reconfiguration of the TVBD  
3 network or device served by this CE.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
status	BOOLEAN	Status: successful or not
failedParameters	FailedParameters OPTIONAL	Failed reconfiguration parameters with recommended values of parameters if reconfiguration request from CM to TVBD is failed

#### 4 6.2.12.3 CM\_Reconfiguration\_Request

5 This message is sent from a CM to another CM to request reconfiguration of one or several TVBD  
6 networks or devices served by this CM.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each TVBD network or device		
reconfigurationTarget = CE_ID	CX_ID	Indicates TVBD network or device to be reconfigured
reconfigurationRequest	ReconfigurationRequest	Reconfiguration request description
chClassInfo	ChClassInfo OPTIONAL	Channel classification information of the CE

#### 7 6.2.12.4 CM\_Reconfiguration\_Response

8 This message is sent from a CM to another CM to report the result of the requested reconfiguration of the  
9 TVBD network or device.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of

		reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
Note: Information elements below are repeated for each TVBD network or device		
reconfigurationTarget = CE_ID	CX_ID	Indicates TVBD network or device to be reconfigured
status	BOOLEAN	Status: successful or not
failedParameters	FailedParameters OPTIONAL	Failed reconfiguration parameters with recommended values of parameters if reconfiguration request from CM to TVBD is failed

### 1 6.2.12.5 ResourceReconfiguration.Request

- 2 This message is sent from CE to CM to request to allocate resource. This message contains each of TVBD  
3 device or network's information including available channel list obtained from TVWS DB.

<b>Header</b>		
<i>Name</i>	<i>Data type</i>	<i>Description</i>
SourceIdentifier = CE_ID	COEX_ID	Source identifier
DestinationIdentifier = CM_ID	COEX_ID	Destination identifier
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
TVBDType	TVBD_TYPE	TVBD device or network type
Geolocation	GEO_LOC	Registered geolocation
ChannelNumber	INTEGER OPTIONAL	Channel number
startFreq	REAL OPTIONAL	Start frequency
endFreq	REAL OPTIONAL	End frequency
MaximumPowerLevel	REAL	Power limit
ChannelLoad	REAL OPTIONAL	Expected throughput

### 4 6.2.12.6 ResourceReconfiguration.Response

- 5 This message is sent from CM to allocate resources to requested CE.

<b>Header</b>		
<i>Name</i>	<i>Data type</i>	<i>Description</i>
SourceIdentifier	COEX_ID	CM identifier
DestinationIdentifier	COEX_ID	CE identifier
<b>Payload</b>		



<i>Information element</i>	<i>Data type</i>	<i>Description</i>
ChannelNumber	INTEGER OPTIONAL	Channel number
startFreq	REAL OPTIONAL	Start frequency
endFreq	REAL OPTIONAL	End frequency
MaximumPowerLevel	REAL	Power limit

## 1 6.2.13 Sending event indication procedures

### 2 6.2.13.1 Event\_Indication

3 This message is sent from a CE to a CM to indicate an event in its TVBD network or device. Also, this  
4 message is sent from a CM to another CM to indicate an event in its TVBD network or device.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CE_ID or CM_ID	CX_ID	Source identifier
destinationIdentifier = CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
eventParams	EventParams	List of event parameters

### 5 6.2.13.2 Event\_Confirm

6 This message is sent from a CM to a CE to confirm reception of an Event\_Indication message. Also, this  
7 message is sent from a CM to another CM to confirm reception of an Event\_Indication message.

<b>Header</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
sourceIdentifier = CM_ID	CX_ID	Source identifier
destinationIdentifier = CE_ID or CM_ID	CX_ID	Destination identifier
ACKPolicy	BOOLEAN	Request to send an acknowledgement of reception
<b>Payload</b>		
<i>Information element</i>	<i>Data type</i>	<i>Description</i>
None		

## 8 6.3 Data types

9 CX\_ID ::= ENUMERATED{  
10 CE\_ID,  
11 CM\_ID,  
12 CDIS\_ID,  
13 TVWSDB\_ID

```
1  }
2  OperationCode ::= ENUMERATED{
3    New,
4    Add,
5    Modify,
6    Remove
7  }
8
9  SubscribedService ::= ENUMERATED{
10   information,
11   management,
12   interCMNeighbors,
13   allNeighbors
14 }
15
16 NetworkID ::= ENUMERATED{
17   BSSID,
18   ...
19 }
20
21 NetworkTechnology ::= ENUMERATED{
22   IEEE802.11af,
23   IEEE802.22,
24   ECMA392,
25   ...
26 }
27
28 NetworkType ::= ENUMERATED{
```

```

1   fixed,
2   mode2,
3   ...
4   }
5
6   DiscoveryInformation ::= SEQUENCE {
7       coordinateX    REAL,
8       coordinateY    REAL,
9       coordinateZ    REAL,
10      maxTxPower     REAL,
11      rxSensitivity   REAL,
12      antennaGain     REAL,
13      minReqSNR       REAL,
14      TolerableInterferenceLevel REAL,
15      antennaHeight   REAL,
16      ...
17  }
18  ListOfSupportedChNumber ::= SEQUENCE OF INTEGER
19
20  ListOfOperatingChNumber ::= SEQUENCE OF INTEGER
21
22  ListOfSupportedFrequencies ::= SEQUENCE OF SEQUENCE {
23      startFreq    REAL,
24      stopFreq     REAL
25  }
26
27  ListOfOperatingFrequencies ::= SEQUENCE OF SEQUENCE {
28      startFreq     REAL,

```

```

1   stopFreq      REAL,
2   occupancy     REAL,
3   totalOccupancy REAL OPTIONAL
4 }
5
6 InterferenceDirection ::= ENUMERATED{mutual, source, victim}
7
8 FreqDescription ::= SEQUENCE {
9   networkID      NetworkID  OPTIONAL,
10  networkTechnology NetworkTechnology  OPTIONAL,
11  coexType        ENUMERATED{known, unknown},
12  interferenceDirection InterferenceDirection,
13  occupancy       REAL OPTIONAL,
14  totalOccupancy  REAL OPTIONAL
15 }
16
17 RadioEnvironmentInformation ::= SEQUENCE OF SEQUENCE {
18   startFreq      REAL,
19   stopFreq       REAL,
20   state          ENUMERATED{free, occupiedKnown, occupiedUnknown, notMeasured},
21   freqDescription FreqDescription  OPTIONAL
22 }
23
24 NetworkGeometryClass ::= CHOICE{Class#1, Class#2, Class#3, Class#4}
25
26 DeviceLocation ::= SEQUENCE {
27   coordinateX    REAL,
28   coordinateY    REAL,

```

```

1   coordinateZ    REAL
2   }
3
4   RequiredResource ::= SEQUENCE OF SEQUENCE {
5       requiredBandwidth    REAL,
6       expectedLoad        REAL
7   }
8
9   ListOfAllowedTVWSChNumber ::= SEQUENCE OF INTEGER
10
11  ConstOfChUseID ::= ENUMERATED {
12      regulationMaxTxPower,
13      regulationMaxAntGain,
14      regulationMaxAntHeight,
15      regulationTVDBUpdateTime,
16      OutOfBandEmissionLimit,
17      ...
18  }
19
20  ConstOfChUseValue ::= CHOICE {
21      regulationMaxTxPower          REAL,
22      regulationMaxAntMaxGain      REAL,
23      regulationAntMaxHeight       REAL,
24      regulationTVDBUpdateTime     REAL,
25      OutOfBandEmissionLimit       REAL,
26      ...
27  }
28
29  ConstOfChUse ::= SEQUENCE {
30      constOfChUseID                ConstOfChUseID,
31      constOfChUseValue             ConstOfChUseValue
32  }
33
34  ConstOfChUses ::= SEQUENCE OF ConstOfChUse
35
36  ListOfNeighborCEID ::= SEQUENCE OF CX_ID
37
38  OperatingChannelInfo ::= SEQUENCE {
39      operatingChannelNumber        INTEGER,
40      listOfNetworkID              SEQUENCE OF NetworkID,

```

```

1          ...
2      }
3
4  ChClassInfo ::= SEQUENCE {
5      availableChannelList      SEQUENCE OF INTEGER,
6      restrictedChannelList     SEQUENCE OF INTEGER,
7      protectedChannelList     SEQUENCE OF INTEGER,
8      unclassifiedChannelList   SEQUENCE OF INTEGER,
9      operatingChannelList      SEQUENCE OF OperatingChannelInfo,
10     coexistenceChannelList    SEQUENCE OF OperatingChannelInfo,
11     ...
12
13 }
14
15 ReqInfoDescr ::= SEQUENCE OF ENUMERATED{
16     SINR,
17     desiredBandwidth,
18     desiredOccupancy,
19     desiredQoS,
20     desiredCoverage,
21     channelNumber,
22     ...
23 }
24
25 ReqInfoValue ::= SEQUENCE OF SEQUENCE {
26     reqInfoDescr  ReqInfoDescr,
27     reqInfoValue  CHOICE{SINRValue  REAL, desiredBandwidthValue  REAL,
28         desiredOccupancyValue  REAL, desiredQoSValue  REAL,
29         desiredCoverageValue  REAL, channelNumberValue...REAL,
30         otherValue  ANY}
31 }
32

```

```

1  MeasSchedule ::= SEQUENCE {
2      measStartTime          REAL,
3      numberOfMeasurements  INTEGER,
4      timeBetweenMeasurements REAL
5  }
6  MeasFreq ::= SEQUENCE {
7      measStartFreq          REAL OPTIONAL,
8      measEndFreq            REAL OPTIONAL,
9      listOfChNumber         SEQUENCE OF INTEGER OPTIONAL
10 }
11
12 MeasurementDescription ::= SEQUENCE OF SEQUENCE {
13     measDescr  ENUMERATED {SINR, BER, SensingLevel, PrimaryDetection, TVBDDetection,
14                             ChannelLoadMeasurement...},
15     measSchedule  MeasSchedule,
16     measFreq      MeasFreq
17 }
18
19 MeasurementResult ::= SEQUENCE OF SEQUENCE {
20     reqInfoDescr  ReqInfoDescr,
21     reqInfoValue  CHOICE {SINRValue          REAL,  BERValue
22     REAL,SensingLevelValue  REAL, PrimaryDetection BOOLEAN,
23                             TVBDDetection BOOLEAN, ChannelLoadMeasurement REAL,
24                             otherValue  ANY}
25 }
26
27 StartEndTime ::= SEQUENCE {
28     startTime          REAL,

```

```

1           endTime           REAL,
2     }
3
4   NegotiationStatus ::= SEQUENCE {
5       negotiationSuccess    BOOLEAN,
6       negotiationFailure    BOOLEAN,
7       underNegotiation      BOOLEAN,.
8       ...
9   }
10
11  TimeSharingUnitInfo ::= SEQUENCE {
12      referenceTime          REAL,
13      windowTime             StartEndTime,
14      slotTime               StartEndTime,
15      ...
16  }
17
18  NegotiationInformation ::= SEQUENCE {
19      Mode                    BOOLEAN,
20      listOfChNumber          SEQUENCE OF INTEGER
21      timeSharingUnitInfo     TimeSharingUnitInfo,
22      slotTimePosition        StartEndTime,
23      numberOfSlots           INTEGER
24      disallowedSlotTimePosition StartEndTime,
25      listOfContentionNumbers SEQUENCE OF REAL
26      ...
27  }
28

```



```

1  ListOfWinnerCMID ::= SEQUENCE OF CX_ID
2
3  ListOfSlotTimePosition ::= SEQUENCE OF REAL
4
5  TxSchedule ::= SEQUENCE {
6      scheduleStartTime      REAL,
7      scheduleDuration       REAL,
8      numberOfScheduleRepetitions  INTEGER,
9      transmissionStartTime   REAL,
10     transmissionDuration    REAL
11 }
12
13 ReconfigurationRequest ::= SEQUENCE OF SEQUENCE {
14     operatingFrequency  SEQUENCE {startFreq  REAL, stopFreq  REAL} OPTIONAL,
15     listOfoperatingChNumber    SEQUENCE OF INTEGER OPTIONAL,
16
17     txPowerLimit      REAL,
18     channelsShared    BOOLEAN,
19     txSchedule        SEQUENCE OF TxSchedule OPTIONAL,
20     networkTechnology NetworkTechnology,
21 }
22
23 FailedParameterID ::= ENUMERATED {
24     operatingFrequency,
25     listOfoperatingChNumber,
26     txPowerLimit,
27     channelsShared,
28     txSchedule,
29 }
30
31
32 FailedParameterValue ::= CHOICE {
33     operatingFrequency      SEQUENCE {startFreq  REAL, stopFreq  REAL},
34     listOfoperatingChNumber SEQUENCE OF INTEGER,
35     txPowerLimit            REAL,

```

```

1           channelsShared          BOOLEAN,
2           txSchedule              SEQUENCE OF TxSchedule OPTIONAL
3     }
4
5     FailedParameter ::= SEQUENCE{
6         failedParameterID         FailedParameterID,
7         failedParameterValue      FailedParameterValue
8     }
9
10    FailedParameters ::= SEQUENCE OF FailedParameter
11
12
13    EventDescr ::= ENUMERATED{
14        SINRThresholdReached,
15        QoSDegradation,
16        MisLocatedTVBDDetected,
17        ...
18    }
19
20    MisLocatedTVBDDetectedInfo ::= SEQUENCE{
21        networkID      NetworkID,
22        listOfoperatingFrequency SEQUENCE OF SEQUENCE{startFreq REAL, stopFreq REAL}
23        OPTIONAL,
24        listOfChannelNumber SEQUENCE OF INTEGER OPTIONAL
25    }
26
27    AddInfo ::= CHOICE{
28        misLocatedTVBDDetectedInfo MisLocatedTVBDDetectedInfo,
29        ...
30    }
31
32    EventParams ::= SEQUENCE{
33        eventDescr EventDescr,

```

```

1      addInfo      AddInfo OPTIONAL
2  }
3
4  GuranteedQoSofWiredConnection ::= ENUMERATED {
5      CHOICE {xDSL, OpticalFibre, Others},
6      GuranteedMinimumBitRates,
7      GuranteedMaximumLatency OPTIONAL,
8      ...
9  }
10
11  AggregatedInterferenceControlParameters ::= SEQUENCE {
12      ReferencePointID      INTEGER,
13      Geolocation            ReferencePointGeolocation,
14      ACS                    REAL,
15      Antenna height        REAL,
16      Antenna gain          REAL,
17      Protection ratio      REAL,
18      ...
19  }
20
21  ReferencePointGeolocation ::= ENUMERATED {
22      Latitude                REAL,
23      Longitude               REAL,
24      Altitude                REAL,
25      ...
26  }
27
28

```