Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Providing a serving BS with information of neighbor BSs**
Date Submitted	**2004-05-14**
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Re:	This is a response to a Call for Comments IEEE802.16e-04/xx on IEEE P802.16e-D2
Abstract	This document contains suggestions to provide a BS with information of neighbor BSs.
Purpose	This document is submitted for review by 802.16e Working Group members
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Providing a serving BS with information of neighbor BSs

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1. Background

In the IEEE802.16e-D2, a serving BS transmits a MOB-NBR-ADV management message periodically including channel information of neighbor BSs (e.g. downlink center frequency, UCD, DCD) to identify the network and define the characteristics of neighbor BS to potential MSS seeking initial network entry or handover.

But, there is no description about how a serving BS gets channel information of neighbor BSs in the IEEE802.16e-D2.

2. Proposed Remedy

We propose that a BS shall obtain information of neighbor BSs (e.g. DCD, UCD) over the backbone.

We propose Inter-base station messages (BS-info-request, BS-info-response message) to exchange their channel information among BSs.

Remedy 1 :

[In 6.3.20.1.1 Network topology advertisement, page 41, line 29 , modify as :]

6.3.20.1.1 Network topology advertisement

A BS shall broadcast information about the network topology using the MOB-NBR-ADV MAC Management message. The message provides channel information for neighboring base stations normally provided by each BS' own DCD/UCD message transmissions. **A BS may obtain neighboring base stations' DCD/UCD over the backbone.** Availability of this information facilitates MSS synchronization with neighboring BS by removing the need to monitor transmission from the target BS for DCD/UCD broadcasts.

Remedy 1 :

[In Annex D.1 Backbone network services, page 97, line 24, modify as :]

D.1 Backbone network services

The backbone network provides a backhaul transmission path to the BS, and may provide other services at the control plane level. Table D1 shows a list of services provided to the BS through backbone network. Some of these services may be provided by other means (highlighted).

Table D1—Backbone Network Services

Service	Possible methods for providing service	Comments
Provide a BS with the identity of its neighbors	(1) Get info from ASA server (2) Configuration (network management)	Options (1) and (2) are really the same, the only difference is where the configuration is done
Provide a BS with the identity of the ASA server	(1) ASA server publishes its presence (2) Configuration (network management)	Message format and transport protocol need to be specified for interoperability
Advertise the fact that a certain MSS has registered with a certain BS	(1) BS notifies ASA server (2) BS notifies neighbor BS	Message format and transport protocol need to be specified for interoperability
Provide a BS information about a certain MSS	(1) ASA server provides information (2) Serving BS provides information (or network management if Serving BS cannot be found)	Message format and transport protocol need to be specified for interoperability
Information exchange during HO	(1) ASA server is in the middle (2) BS to BS direct exchange	Message format and transport protocol need to be specified for interoperability
Provide a BS with information of its neighbors	(1) ASA server is in the middle (2) BS to BS direct exchange	Message format and transport protocol need to be specified for interoperability

Remedy 2 :

[In Annex D.2 inter-base station message format, page 103, line 24, add new messages as following :]

D.2.11 BS-info-request message

This message may be sent from one BS to another (or to the ASA server) to request information about neighbor BS. A BS requests channel information of neighbor BSs through this message. The message may be sent periodically.

The message contains the following information,

Field	Size	Notes
Message Type = ?	8-bit	
Sender BS-ID	48-bit	Base station unique identifier (Same number as that broadcasted on the DL-MAP message)
Target BS-ID	48-bit	Set to 0xffffff to indicate broadcast
Security field	TBD	A means to authenticate this message

D.2.12 BS-info-response message

This message may be sent from one BS to another (or to the ASA server) to provide information about BS. Typically the message may be sent as a reaction to reception of an BS-info-request message, and it may be sent unsolicited, periodically or whenever BS's channel information (e.g. DCD, UCD) is changed.

The message contains the following information :

Field	Size	Notes
Message Type = ?	8-bit	
Sender BS-ID	48-bit	Base station unique identifier
Target BS-ID	48-bit	Set to 0xffffff to indicate broadcast
Time Stamp	32-bit	Number of milliseconds since midnight GMT (set to 0xffffffff to ignore)
Configuration Change Count	8-bit	Incremented each time the information for the BS has changed.
TLV Encoded information	Variable	TLV information as allowed on DCD, UCD messages
Security field	TBD	A means to authenticate this message