Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Proposal for BS IP Management**	
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Re:	Contribution on IEEE 802.16g/D4	
Abstract	This contribution proposed a method to distribute IP address to BS by NCMS. Add this feature can greatly save operators' CAPEX and OPEX.	
Purpose	Adoption	
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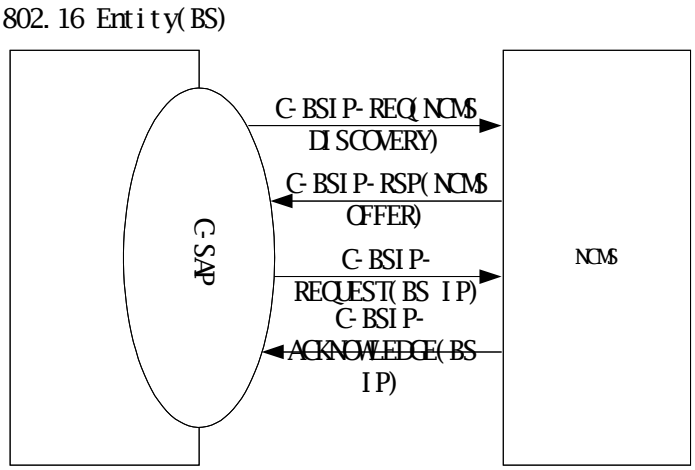
Proposal for BS IP address Management

HUAWEI

Introduction

Commonly BS IP addresses are configured manually with careful IP address distribution plan. But with network becoming larger, it is a hard work to plan the IP distribution manually. On the other hand, sometimes BS may be moved to other places, operators must redistribute IP addresses accordingly.

This contribution proposes to provide a method to distribute IP addresses for BS by NCMS. When BS starts, it requests IP address from NCMS. NCMS examines BS identifier–MS ID, and offers a free IP address from its IP address pool.



(1) When BS starts, it sends a discovery message to find NCMS IP address.

(2) NCMS sends an offer message to BS to provide its IP address and suggestive BS IP address.

(3) BS requests IP address for itself.

(4) NCMS provides a usable IP address for BS.

Proposed Text Changes

Add section 14.2.12 BS IP management as follows:

14.2.12 **BS IP management**

These primitives are provided when BS IP address is managed. It is available for both IPv4 and IPv6.

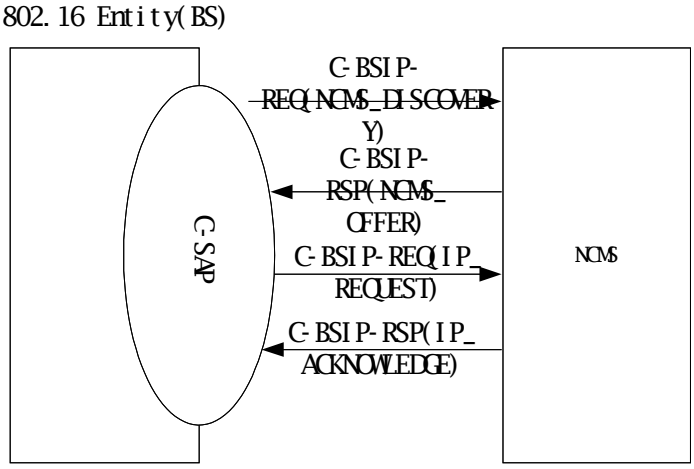


Figure BS IP address distributed by NCMS

14.2.12.1 **C-BSIP-REQ**

This primitive is used by an 802.16 entity(BS) to ask for NCMS IP address or IP address for itself. The Event Type included in this primitive defines the information included in this primitive. The possible Event Types for this primitive are list in Table blow:

Event Type	Description
NCMS_DISCOVERY	Ask for NCMS IP address
IP_REQUEST	Ask for IP address for BS

14.2.12.1.1 **C-BSIP-REQ(Event Type==NCMS_DISCOVERY)**

Function:

BS sends the broadcast message to ask for NCMS IP address.

Semantics of the Service Primitives:

The parameters of the primitives are as follows:

C-BSIP-REQ

{

Message_id,

Event_Type(NCMS_DISCOVERY),

Object_id(BS_ID),

Attribute_list,

BS_ID

Payload

}

BS_ID

48-bit unique identifier

Payload

Contains the DHCP payload

When generated:

- BS to NCMS

This primitive is generated when BS restarts.

Effect of receipt:

- BS to NCMS

The DHCP server in NCMS processes this signaling to provide DHCP server IP address.

14.2.12.1.2 **C-BSIP-REQ(Event Type==IP_REQUEST)**

Function:

BS sends the message to ask NCMS for IP address for itself.

Semantics of the Service Primitives:

The parameters of the primitives are as follows:

C-BSIP-REQ

{

Message_id,

Event_Type(IP_REQUEST),

Object_id(BS_ID),

Attribute_list:

BS_ID

Payload

}

BS_ID

48-bit unique identifier

Payload

Contains DHCP payload

When generated:

- BS to NCMS

This primitive is generated when BS receives NCMS IP address.

Effect of receipt:

- BS to NCMS

DHCP server in NCMS processes this signaling to provide BS with IP address.

14.2.12.2 **C-BSIP-RSP**

This primitive is used by NCMS to answer BS with NCMS IP address or IP address. The Event Type included in this primitive defines the information included in this primitive. The possible Event Types for this primitive are list in Table below:

Event Type	Description
NCMS_OFFER	provide NCMS IP address
IP_ACKNOWLEDGE	Provide IP address for BS

14.2.12.2.1 **C-BSIP-RSP(Event Type==NCMS_OFFER)**

Function:

NCMS responses to BS request message to provide NCMS IP address.

Semantics of the Service Primitives:

The parameters of the primitives are as follows:

C-BSIP-RSP

{

Message_id,

Event_Type(NCMS_OFFER),

Object_id(NCMS),

Attribute_list:

BS_ID

Payload

}

BS_ID

48-bit unique identifier

Payload

Contains DHCP payload

When generated:

- NCMS to BS

This primitive is generated when NCMS receives BS request message.

Effect of receipt:

- NCMS to BS

BS processes this signaling to ask for its IP address.

14.2.12.2.2 **C-BSIP-RSP(Event Type==IP_ACKNOWLEDGE)**

Function:

NCMS sends the message to provide BS with IP address.

Semantics of the Service Primitives:

The parameters of the primitives are as follows:

C-BSIP-RSP

{

Message_id,

Event_Type(IP_ACKNOWLEDGE),

Object_id(NCMS),

Attribute_list:

Payload

}

BS_ID

48-bit unique identifier

Payload

Contains DHCP payload

When generated:

- NCMS to BS

This primitive is generated when NCMS receives BS request for IP address.

Effect of receipt:

- NCMS to BS

The BS knows IP address.