Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**IPv4 connection management**
Date Submitted	**2005-07-12**

Source(s)	Mi Young Yun	myyun@etri.re.kr
	Jung Mo Moon, PhD	jmmoon@etri.re.kr
	Sang Ho Lee, PhD	leesh@etri.re.kr
	ETRI 161, Gajeong-dong,Yuseong-Gu, Daejeon, 305-350, Korea	Voice: 82-42-860-4821 Fax: 82-42-861-1966

Re:	Contribution on comments to IEEE 802.16g-04/03r3
Abstract	In this contribution, we describe IPv4 connection procedure and primitives that could be exchanged between the BS and the NCMS entities.
Purpose	Adoption
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IPv4 connection Management

Mi Young Yun, Jung Mo Moon and Sang Ho Lee

ETRI

1. Problem Statement

The purpose is to describe IPv4 connection procedure and primitives that could be exchanged between the BS and the NCMS entities. This proposal makes it possible to establish IP connectivity for SS and MS as specified in the remainder of this document.

2. Summary of the Proposed Remedy

In this contribution, we define 3 primitives to support service flow management between BS and access network (NCMS) which are described briefly in the following table.

Primitive	Direction	Primitive Contents
MIP_Transfer	BS <-> NCMS	MS ID, MIP Payload
DHCP_Transfer	BS <-> NCMS	MS ID, DHCP Payload
IP_Allocation_Notification.indication	BS <- NCMS	MS ID, Allocated IP Address

3. Proposed Text Changes

[*Insert section 14.5.6.3 as follow*]

14.5.6.3 SS/MS Connection Management

14.5.6.3.1 IPv4 Connection Management

There are two kinds of IP allocation method, DHCP (Dynamic Host Control Protocol) and MIP (Mobile IP).

First, for the IP allocation using DHCP, the DHCP protocol is employed in SS/MS and NCMS (a DHCP relay agent and a server). DHCP payloads are transported between SS/MS and BS, but BS forward them encapsulated. SS/MS sends a DHCPDISCOVER message in order to initiate IP allocation procedure. A SS/MS receives a DHCPOFFER message which has the information of DHCP server. The SS/MS requests an IP address allocation by sending a DHCPREQUEST message. Then a newly allocated IP address is provided by the DHCP server in a DHCPACK message. A Gateway address, DNS (Domain Name Server) addresses, and an IP address lease time are also represented.

Second, for the IP allocation using MIP, the MIP protocol is employed in MS and NCMS or a mobility agent (a Foreign Agent and/or a Home Agent). MIP payloads encapsulated also are forwarded between MS and BS. MIP procedure is started when a MS receives an Agent Advertisement message with information of a mobility agent. After that, the SS sends a MIP Registration Request message which includes a Home Agent address, a user NAI (Network Access Identifier) and so on. Then, the MS receives a MIP Registration Response message with successful Result-Code. If the MS forwards the MIP Registration Request message with no IP address, an allocated IP address is represented in the MIP Registration Response.

14.5.6.3.2 Service Primitives

14.5.6.3.2.1 DHCP_Transfer

14.5.6.3.2.1.1 Function

DHCP payloads are exchanged between an SS/MS and an DHCP Client entity. The DHCP payloads are encapsulated in the DHCP Transfer primitive because it is not interpreted in the BS.

14.5.6.3.2.1.2 Semantics of the Service Primitives

The parameters of the primitives are as follows:

DHCP_Transfer
{
MS/SS ID
DHCP Payload
}

MS/SS ID

48-bit unique identifier used for user identification between BS and NCMS

DHCP Payload
Contains the DHCP payload

14.5.6.3.2.2 MIP_Transfer

14.5.6.3.2.2.1 Function

MIP payloads are exchanged between an MS and an entity with functionalities of mobility agent in NCMS. The MIP payloads are encapsulated in the MIP Transfer primitive because it is not interpreted in the BS.

14.5.6.3.2.2.2 Semantics of the Service Primitives

The parameters of the primitives are as follows:

MIP_Transfer
{
MS ID
MIP Payload
}

MS ID
48-bit unique identifier used for user identification between BS and NCMS
MIP Payload
Contains the MIP payload

14.5.6.3.2.3 IP_Allocation_Notification.indication

14.5.6.3.2.3.1 Function

After MIP or DHCP exchanges are completed, the SS/MS gets a new allocated IP address. For the BS, NCMS sends a new allocated IP address for the SS/MS in IP_Allocation.indication primitive.

14.5.6.3.2.3.2 Semantics of the Service Primitives

The parameters of the primitives are as follows:

IP_Allocation_Notification.indication
{
MS ID
IP Address
}

MS ID
48-bit unique identifier used for user identification between BS and NCMS
IP Address
A new address allocated to the SS/MS using DHCP or MIP.

14.5.6.3.2.3.3 When generated

This primitive is issued by a NCMS (a DHCP client or a Mobility Agent) when the IP allocation procedure are successfully completed.

14.5.6.3.2.3.4 Effect of receipt
A newly allocated IP address is known to the BS.

References
[1] R. Droms, “Dynamic Host Configuration Protocol,” RFC2131, March 1997
[2] C. Perkins, “IP Mobility Support for IPv4,” RFC3344, August 2002
[3] IEEE-Std 802.16-2004
[4] IEEE P802.16e/D9