

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Frame structure consolidation for IP broadcast	
Date Submitted	2005-11-08	
Source(s)	Wu Xuyong Huawei Huawei Industrial Base, Bantian, Longgang, Shenzhen 518129 P.R.C	Voice: +86-755-28971677 Fax: +86-755-28972045 wuxuyong@huawei.com
Re:	80216h-05_023 : Call for Contributions: IEEE 802.16 License-Exempt Task Group	
Abstract	Consolidate the frame structure of the IP broadcasting frame in 16h, to make it compatible for IPv6 and future extension	
Purpose	Consolidate the frame structure used in the initializing base station's broadcasting	
Notice	This document has been prepared to assist IEEE 802.16. 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.	
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.	
Patent Policy and Procedures	The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures < http://ieee802.org/16/ipr/patents/policy.html >, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair < mailto:chair@wirelessman.org > as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site < http://ieee802.org/16/ipr/patents/notices >.	

Frame structure consolidation for IP broadcast

Wu Xuyong, Pan Zhong, Zhao Quanbo
Huawei

Overview

The CTS frame Structure and IBS_IPBC message frame is proposed in the working document and call for future contribution. Since this frame structure is not easy compatible for future usage, this paper give some modification to consolidate the frame structure to us in the CTS. The original text is shown below:

15.2.1.1.5 CTS Frame Structure

CTS frame is broadcasted from the base station to coexistence neighbor's subscriber station. They are loaded in serialized CTS slots. It consists of power keying energy symbols as basic element and carry the information from BS to the coexistence neighbor's SS. The CTS frame has the <SOF> symbols and <EOF> symbols as the boundary, and should be continuously carried in the serialized CTS slots during the whole frame structure. Each CTS frame shall have cyclic redundancy check data to check the validity of the information carried in the frame. The basic structure is shown below:

SOF	PLD	CRC	EOF
------------	------------	------------	------------

15.6.8.2.1 IBS_IPBC

IBS_IPBC message is the message broadcasted by the initializing base station to the SS in the coexistence neighbor network. It use the CTS slots and power keying energy symbols to carry the IP address information from the IBS to the SS, and the IP information shall be reported by the SS to the serving coexistence neighbor BS. And the serving coexistence neighbor BS will find the initializing BS in the IP network, and then start the further coexistence negotiation.

SOF	Payload (IPAddress)	CRC8	EOF
------------	----------------------------	-------------	------------

Table h1. IBS_IPBC message format

Syntax	Size	notes
IP address broadcast frame(){		Every CTS is consist of n symbol, (n>=1)
<SOF>Start of frame	1 symbol	
PLD:IP address of initializing base station	32 bits	1 bits = 1 symbol
CRC: Cyclic Redundancy Check	8 bits	Polynomial "X ⁸ +X ² +X+1"
<EOF>Start of frame	1 symbol	
}		

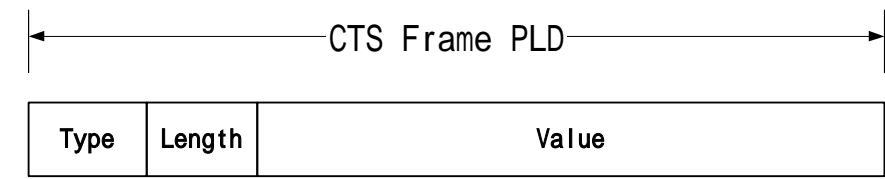
Reference:

- [1] *IEEE802.16-2004: IEEE standard for Local and metropolitan area networks Part16: Air Interface for Fixed Broadband Wireless Access Systems 2004-10-01*
- [2] *IEEE P802.16e/D12, October 2005: Amendment for Physical and Medium Access Control Layers for Combined Fixed and Mobile Operation in Licensed Bands 2005-10-14*
- [3] *IEEE P802.16-2004/Cor1/D5: Corrigendum to IEEE Standard for Local and Metropolitan Area Networks 2005-09-12*

Proposed Text changes in working document:

[insert the following paragraph into section 15.2.1.1.5]

The PLD (payload) part of the CTS frame should be divided into TLV aspect. TYPE indicate the type of the payload, LENGTH correspond to the number of symbols/bits contained in the VALUE portion. (TYPE and LENGTH is 1 octet each.)



[change section 15.6.8.2.1 into the following paragraph]

15.6.8.2.1 IBS_IPBC

IBS_IPBC message is the message broadcasted by the initializing base station to the SS in the coexistence neighbor network. It use the CTS ~~slots and power keying energy symbols frame~~ to carry the IP address information from the IBS to the SS, and the IP information shall be reported by the SS to the serving coexistence neighbor BS. And the serving coexistence neighbor BS will find the initializing BS in the IP network, and then start the further coexistence negotiation.

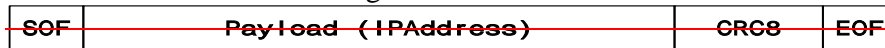


Table h2. IBS_IPBC message format

Syntax	Size	Notes
IP address broadcast frame <u>payload()</u> {		Every CTS is consist of n symbol, (n>=1)
—<SOF>Start of frame	1 symbol	
 <u>Type (0 or 1)</u>	8 bits	(0- IPv4 address Broadcast 1- Ipv6 address Broadcast)
 <u>If (Type =0){</u>		
 <u> Length</u>	8 bits	32
 <u> PLD:IP address of initializing base station</u>	32 bits	1 bits = 1 symbol
 <u> IPv4 address of IBS</u>		
 <u>}</u>		
 <u>Else if(Type =1){</u>		
 <u> Length</u>	8 bits	128
 <u> IPv6 address of IBS</u>	128 bits	
 <u>}</u>		
 <u>—CRC: Cyclic Redundancy Check</u>	8 bits	Polynomial “X8+X2+X+1”
 <u>—<EOF>Start of frame</u>	1 symbol	
}		