Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
Title	Frame structure consolidation for IP broadcast
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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
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Frame structure consolidation for IP broadcast

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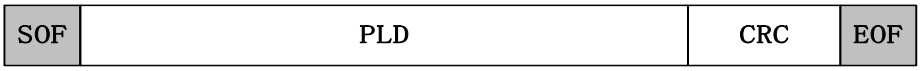
Overview

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:



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.

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 "X8+X2+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*

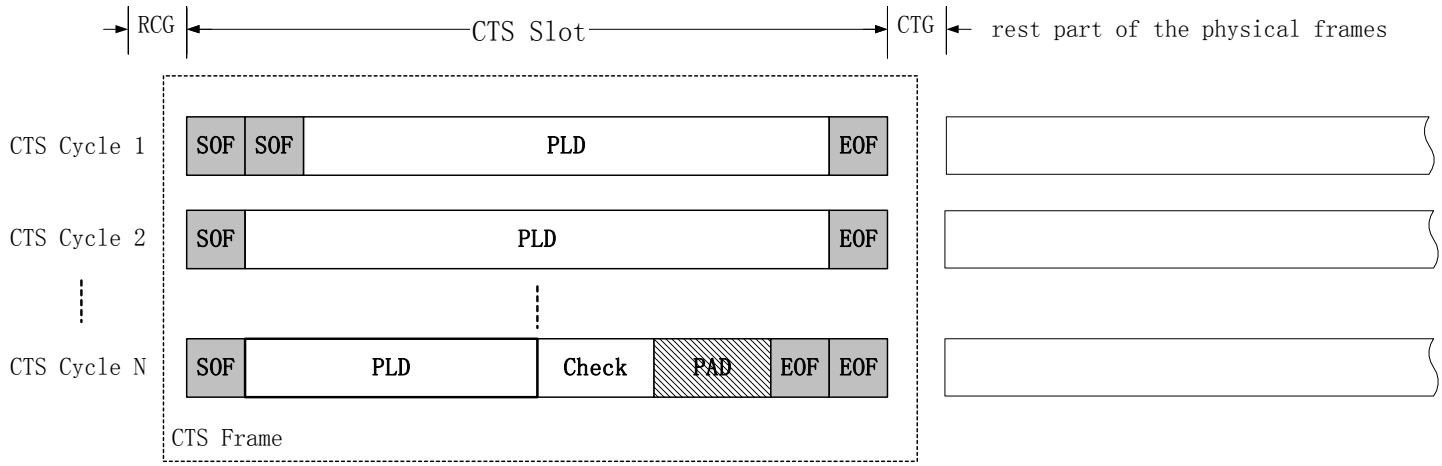
[4] *IEEE 802.16-05/022: working document Amendment for Improved Coexistence Mechanisms for License-Exempt Operation 2005-09-28*

Proposed Text changes in working document:

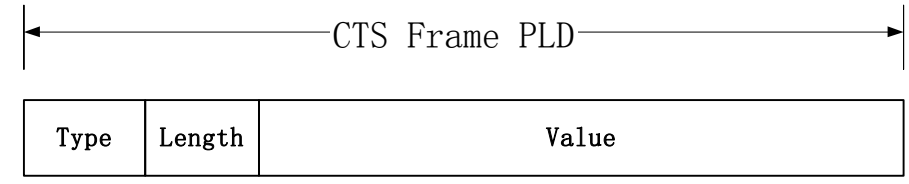
[insert the following paragraph into section 15.2.1.1.5]

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 into 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 of slots, and two consecutive <SOF> and <EOF> indicate the message boundary, it shall be filled with symbol one in the rest part of last slots which have not enough payload and checking appendant. ~~and~~ CTS frame should be continuously carried in the serialized CTS slots during the whole CTS frame structure. Each CTS frame shall have 8 bits cyclic redundancy check(Polynomial "X8+X2+X+1") ~~data~~ appendant to check the validity of the information carried in the CTS frame. The basic structure is shown below:



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.

~~SOF~~	~~Payload (IPAddress)~~	~~CRC8~~	~~EOF~~

~~Table h2. 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 "X8+X2+X+1"~~
~~<EOF>Start of frame~~	~~1 symbol~~	
~~}~~		

Table h2. IBS_IPBC message TLV encoding

Name	Type(1byte)	Length	Value (Variable length)
IPBC_V4	0	4	BS IP address(IPv4)
IPBC_V6	1	16	BS IP address(IPv6)