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Title	**Cleanup texts for S-SFH SPx IEs (Section 16.3.6.5.1.2)**
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Re:	IEEE 802.16-10/0011, "IEEE 802.16 Working Group Letter Ballot#31" Target topic: "IEEE P802.16m/D4, section 16.3.6.2.1".
Abstract	The contribution provides the clean up text for S-SFH SPx IE
Purpose	To be discussed and adopted by TGm for the 802.16m/D5
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Cleanup texts for S-SFH SPx IE (Section 16.3.6.5.1.2)

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1. Introduction

This contribution provides the cleanup text to S-SFH IE in 16.3.6.5.1.2

1. Use the unified terminology for DL/UL control channels
   - UL ACK/NACK channel → UL HARQ feedback channel
   - DL ACK/NACK channel → DL HARQ Feedback A-MAP
2. Add the location of UL sounding symbol for WirelessMAN-OFDMA support
3. Re-arrangement of the fields: move common fields to the upper row.
4. Correct the reserved bits in case of WirelessMAN-OFDMA systems. Table 1 shows the bit calculation of S-SFH SP1 IE.

Table 1. S-SFH SP1 IE

#	Channel	Parameters	16m BS (Macro)			mixed mode		
	DRU	fields	2k	1k	512	fields	1k	512
1	SP1	MSB of superframe number	8	8	8	MSB of superframe number	8	8
2	SP1	LSBs of 48 bit ABS MAC ID	12	12	12	LSBs of 48 bit ABS MAC ID	12	12
3	SP1	Number of UL ACK/NACK channels per HARQ feedback region	2	2	2	Number of UL ACK/NACK channels per HARQ feedback region	2	2
4	SP1	Number of DL ACK/NACK channels per HF-A-MAP region	2	2	2	Number of DL ACK/NACK channels per HF-A-MAP region	2	2
5	SP1	Power control channel resource size indicator	2	2	2	Power control channel resource size indicator	2	2
6	SP1	Primary frequency partition location	1	1	1	Primary frequency partition location	1	1
7	SP1	A-A-MAP MCS selection	1	1	1	A-A-MAP MCS selection	1	1
8	SP1	ABS EIRP	7	7	7	ABS EIRP	7	7
9	SP1	Cell bar information	1	1	1	Cell bar information	1	1
10	SP1	UL_N_MAX_ReTx	1	1	1	UL_N_MAX_ReTx	1	1
11	SP1	DL_N_MAX_ReTx	1	1	1	DL_N_MAX_ReTx	1	1
12	SP1	$T_{UL\_Rx\_Processing}$	1	1	1	$T_{UL\_Rx\_Processing}$	1	1
13	SP1	$DCAS_{SB0}$	5	4	3	$DCAS_{SB0}$	4	3
14	SP1	$DCAS_{MB0}$	5	4	3	$DCAS_{MB0}$	4	3
15	SP1	$DCAS_i$	3	2	1	$DCAS_i$	2	1
16	SP1	Frame configuration index	6	6	6	Frame configuration index	6	6

17	SP1	WirelessMAN-OFDMA support	1	1	1	WirelessMAN-OFDMA support	1	1
18	SP1	Allocation periodicity of ranging channel for non-synchronized AMSs	2	2	2	Allocation periodicity of ranging channel	2	2
19	SP1	Subframe offset of ranging channel	2	2	2	Subframe offset of ranging channel	2	2
20	SP1	Start code information of ranging channel for non-synchronized AMSs	4	4	4	Start code information of ranging channel	4	4
21	SP1	Ranging preamble code partition information for non-synchronized AMSs	4	4	4	Ranging preamble code partition information	4	4
22	SP1	Number of cyclic shifted ranging preamble codes per root index for non-synchronized AMSs	2	2	2	UL_Permbase	7	7
23	SP1	Ranging channel formats for non-synchronized AMSs	1	1	1	location of UL sounding symbol	2	2
24	SP1	UL sounding	3	3	3	Reserved	7	4
25	SP1	$UCAS_{SB0}$	5	4	3			
26	SP1	$UCAS_{MB0}$	5	4	3			
27	SP1	$UCAS_i$	3	2	1			
28	SP1	reserved	TBD	TBD	TBD		TBD	TBD
		Total	90	84	78		84	78

~~Removed text~~

Added text

2. References

[1] IEEE P802.16m/D4, *"P802.16m DRAFT Amendment to IEEE Standard for Local and metropolitan area networks Part 16: Air Interface for Broadband Wireless Access Systems"*, 2010-02-03

3. Proposed Text Changes

[Remedy #1: Adopt the following modification inTable 811, page 448, section 16.3.6.5.1.2]

----------*Start of Remedy #1* ----------

Table 811—S-SFH SP1 IE format

Syntax	Size (bit)	Notes
S-SFH SP1 IE format () {		
MSB of superframe number	8	Remaining bit of SFN except LSB of SFN in P-SFH
LSBs of 48 bit ABS MAC ID	12	Specifies the 12 least significant bits of ABS ID
Number of UL ~~ACK/NACK~~ HARQ feedback channels per HARQ feedback region	2	Describes L_{HFB} in 16.3.8.3.3.2. Channel numbers represented by the two bits (0, 1,2, 3) are as follows. For 5 MHz band, 6, 12, 18, 24 For 10 MHz band, 6, 12, 24, 30 For 20 MHz band, 12, 24, 48, 60
Number of DL ~~ACK/NACK channels~~ HARQ Feedback A-MAPs per HF-A-MAP region	2	Channel numbers represented by the two bits (0, 1, 2, 3) are as follows. For 5 MHz band, 4, 8, 12, 16 For 10 MHz band, 8, 16, 24, 32 For 20 MHz band, 16, 32, 48, 64
Power control channel resource size indicator	2	
Primary frequency partition location	1	0b0: Reuse 1 partition 0b1: Power-boosted reuse 3 partition
~~A~~ A-MAP MCS selection	1	0b0: QPSK 1/2 and QPSK 1/4 can be used for assignment A-MAP in reuse-1 partition. QPSK 1/2 is used for assignment A-MAP in the power-boosted reuse 3 partition of FFR. 0b1: QPSK 1/2 and QPSK 1/8 can be used for assignment A-MAP in reuse-1 partition. QPSK 1/4 is used for assignment A-MAP in the power-boosted reuse 3 partition of FFR.
$DCAS_{SB0}$	5/4/3	See 16.3.5.3.1 DL CRU/DRU allocation For 2048 FFT size, 5 bits For 1024 FFT size, 4 bits For 512 FFT size, 3 bits
$DCAS_{MB0}$	5/4/3	See 16.3.5.3.1 DL CRU/DRU allocation For 2048 FFT size, 5 bits For 1024 FFT size, 4 bits For 512 FFT size, 3 bits
$DCAS_i$	3/2/1	See 16.3.5.3.1 DL CRU/DRU allocation For 2048 FFT size, 3 bits For 1024 FFT size, 2 bits For 512 FFT size, 1 bit
ABS EIRP	7	Signed in units of 1 dBm

Cell bar information	1	If Cell Bar bit = 1, this cell is not allowed for network entry or re-entry
UL_N_MAX_ReTx	1	Specifies the maximum retransmission number for UL HARQ 0b0: 4 0b1: 8
DL_N_MAX_ReTx	1	Specifies the maximum retransmission number for DL HARQ 0b0: 4 0b1: 8
$T_{UL\_Rx\_Processing}$	1	Specifies the ABS's Rx processing time for UL HARQ for F = 8 in FDD or $D + U$ = 8 in TDD 0b0: 3 AAI subframes 0b1: 4 AAI subframes
Frame configuration index	6	The mapping between value of this index and frame configuration is listed in ~~Table~~ Table 780, Table 781,and Table 782
WirelessMAN-OFDMA support	1	Indicates whether frame configuration supports WirelessMAN-OFDMA systems or not 0b0 : No support of WirelessMAN-OFDMA with FDM-based UL PUSC zone 0b1 : Support of WirelessMAN-OFDMA with FDM-based UL PUSC zone
If (WirelessMAN-OFDMA support = 0b1){		
Allocation periodicity of ranging channel	2	Indicates the periodicity of ranging channel allocation according to the Table 898.
Subframe offset of ranging channel	2	Indicates the subframe offset (O_{SF}) of ranging channel allocation related to the Table ~~901~~ 898. The range of values is $0 \le O_{SF} \le 3$
Start code information of ranging channel	4	Indicates the kns which is the parameter for start of code group (S). $S = 16 \times k_{ns} + 1$ The range of values is $0 \le k_{ns} \le 15$.
Ranging preamble code partition information	4	Indicates the number of initial, handover and periodic codes (N, O and M) according to the Table 902.
UL_Permbase	7	Indicate UL_Permbase used in WirelessMAN-OFDMA system
UL sounding location	2	Indicates the index of UL subframe where UL sounding symbol is located
Reserved	4/7~~3~~	For 1024 FFT size, 7 bits For 512 FFT size, 4 bits
} else ~~if (WirelessMAN-OFDMA support = 0b0)~~ {		
if(Femtocell) {		for 16m Femtocell

Allocation periodicity of ranging channel for synchronized AMSs	2	Indicates the periodicity of ranging channel allocation according to the Table ~~900~~901.
Subframe offset of ranging channel	2	Indicates the subframe offset (O_{SF}) of ranging channel allocation related to the Table ~~900~~901. The range of values is $0 \le O_{SF} \le 3$
Start code information of ranging channel for synchronized AMSs	4	Indicates the k_s which is the parameter controlling the start root index of ranging preamble codes (r_{s0}). $r_{s0} = 6 \times k_s + 1$ The range of values is $0 \le k_s \le 15$
Ranging preamble code partition information	4	Indicates the number of initial, handover and periodic codes (N, O and M) according to the Table 900.
Reserved	3	
} else {		
Allocation periodicity of ranging channel for non-synchronized AMSs	2	Indicates the periodicity of ranging channel allocation according to the Table ~~897~~ 898.
Subframe offset of ranging channel	2	Indicates the subframe offset (O_{SF}) of ranging channel allocation related to the Table ~~901~~898. The range of values is $0 \le O_{SF} \le 3$
Start code information of ranging channel for non-synchronized AMSs	4	Indicates the kns which is the parameter controlling the start root index of ranging preamble codes (r_{ns0}). $r_{ns0}(k_{ns}) = 4 \times k_{ns} + 1$ for ranging channel format 0. $r_{ns0}(k_{ns}) = 16 \times k_{ns} + 1$ for ranging channel format 1. The range of values is $0 \le k_{ns} \le 15$
Ranging preamble code partition information for non-synchronized AMSs	4	Indicates the number of initial and handover ranging preamble codes (N_{IN} and N_{HO}) according to the Table ~~899~~897.
Number of cyclic shifted ranging preamble codes per root index for non-synchronized AMSs	2	Indicates the number of cyclic shifted codes per root index (M_{ns}) for ranging preamble codes according to the Table 896.
Ranging channel formats for non-synchronized AMSs	1	Indicates the ranging channel formats number of Table 891
}		
$UCAS_{SB0}$	5/4/3	See 16.3.8.3.1UL CRU/DRU allocation For 2048 FFT size, 5 bits For 1024 FFT size, 4 bits For 512 FFT size, 3 bits

$UCAS_{MB0}$	5/4/3	See 16.3.8.3.1 UL CRU/DRU allocation For 2048 FFT size, 5 bits For 1024 FFT size, 4 bits For 512 FFT size, 3 bits
$UCAS_i$	3/2/1	See 16.3.8.3.1 UL CRU/DRU allocation For 2048 FFT size, 3 bits For 1024 FFT size, 2 bits For 512 FFT size, 1 bits
~~}~~		
Uplink AAI subframes for sounding	3	This value represents the number of uplink AAI subframes with sounding symbols. 0b000 – no sounding symbols 0b001 – 1 AAI subframe 0b010 – 2 AAI subframes 0b011 – 3 AAI subframes 0b100 – 4 AAI subframes 0b101-111 – reserved The sounding symbols shall be placed in AAI subframes in accordance to their type. First, sounding symbols shall be allocated in uplink AAI subframes of type 2 starting from the first in time AAI subframe of type 2. If the number of uplink AAI subframe of type 2 is less than the number of AAI subframes for sounding, sounding symbols shall be allocated in the AAI subframes of other types in the following order: type 1. For these types of uplink AAI subframes sounding symbols shall be allocated in the similar way as for type 2. Type 3 uplink AAI subframes are not used for sounding.
}		
~~ABS EIRP~~	~~7~~	~~Signed in units of 1 dBm~~
~~Cell bar information~~	~~1~~	~~If Cell Bar bit = 1, this cell is not allowed for network entry or re-entry~~
~~UL_N_MAX_ReTx~~	~~1~~	~~Specifies the maximum retransmission number for UL HARQ~~ ~~0b0: 4~~ ~~0b1: 8~~
~~DL_N_MAX_ReTx~~	~~1~~	~~Specifies the maximum retransmission number for DL HARQ~~ ~~0b0: 4~~ ~~0b1: 8~~
~~$T_{UL\_Rx\_Processing}$~~	~~1~~	~~Specifies the ABS's Rx processing time for UL HARQ for F= 8 in FDD or D + U = 8 in TDD~~ ~~0b0: 3 AAI subframes~~ ~~0b1: 4 AAI subframes~~
Reserved	TBD	
}		

---------- End of Remedy #1 ----------