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Title	Refinement of Sleep Mode	
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Re:	IEEE P802.16e/D8-2004	
Abstract	This contribution proposes some changes on Sleep mode	
Purpose	Discuss and adopt this contribution	
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## Refinement on Sleep Mode

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### 1 Problem Statement

The MOB-SLP-REQ/RSP messages have several problems as follows.

- In MOB-SLP-REQ, 4 bit-long Listening window breaks byte-alignment of the other fields. It need to be byte aligned, i.e. 8 bit-long for the consistency with one in MOB-SLP-RSP.
- In MOB-SLP-RSP, the field "Sleep-approved" is used to allow or reject the MSS's respective sleep request of Power Saving Classes. But it does not exist. It is need to be added.
- The MOB-TRF-IND SDU has defined a mode (FMT), however this mode does not appear in the relevant table.

### 2 Suggested Remedy

*[Change the 'Listening window' in Table 108c Sleep-Request (MOB\_SLP-REQ) message format on Page 91, Line 7 as follows]*

**Table 108c—Sleep-Request (MOB\_SLP-REQ) message format**

Syntax	Size (bits)	Notes
Listening-window	48	
final-sleep window base	10	
.....		
...		
}		

*[Change the Table 108d Sleep-Response (MOB\_SLP-RSP) message format on Page 93, Line 4 as follows]*

**Table 108d—Sleep-Response (MOB\_SLP-RSP) message format**

Syntax	Size (bits)	Notes

MOB_SLP-RSP_Message_Format() {		
Management message type = 51	8	
Number of Classes	8	
for (i = 0; i < Number_of_Classes; i++) {		
Length of Data	<u>87</u>	
Sleep Approved	<u>1</u>	
Definition	1	
Operation	1	
Power Saving Class ID	6	
if(Sleep Approved == 1) {		
if (Operation = 1) {		
Start_frame_number	6	
Reserved	2	
} else {		
REQ_duration	8	
}		
if (Definition = 1) {		
Power Saving Class Type	2	
Direction	2	
if(Sleep-approved == 0) {		
REQ_duration	8	
}		
initial-sleep window	8	
listening window	8	
final-sleep window base	10	
final-sleep window exponent	3	
TRF-IND required	1	
Traffic_triggered_wakening_flag	1	
Reserved	1	
if(TRF-IND required) {		
SLPID	10	
Reserved	2	
}		
Number_of_CIDs	4	
for (i = 0; i < Number_of_CIDs; i++) {		
CID	16	
}		
if (SHO or FBSS capability enabled) {		
Maintain Active Set and Anchor BS ID BSID	1	
if (Maintained Active Set and Anchor BS ID BSID)		
{		
SHO/FBSS duration (s)	3	
}		
}		
}		
}		
Padding	<i>variable</i>	If needed for alignment to byte boundary
if (Operation = 1) {		

<b>Power Saving Class TLV encoded information</b>	<i>variable</i>	
}		
} <b>else {</b>		<u>In case 'Sleep Approved == 0'</u>
<b>REQ-duration</b>	<u>8</u>	
<b>1</b>		
}		
<b>TLV encoded information</b>	<i>variable</i>	
}		

Parameters shall be as follows:

**Length\_of\_Data**

Number of bytes in following specification of Power Saving Class

**Sleep\_Appeorved**

1 = Indicates that BS approves the MSS's Activation/Deactivation Request of the Power Saving Class.

0 = Indicates that BS disapproves the MSS's Activation/Deactivation Request of the Power Saving Class.

In case of the unsolicited MOB\_SLP-RSP, there is included information of only the Power Saving Class with Sleep\_Appeorved = 0 in it.

In case of the MOB\_SLP-RSP transmitted from BS in unsolicited manner, it shall include information of only the Power Saving Class with Sleep\_Appeorved = 1.

**Definition**

1 = Definition of Power Saving Class present

**Operation**

1 = Activation of Power Saving Class

0 = Deactivation of Power Saving Class (for types 1 and 2 only; used only with Definition = 0)

**Power\_Saving\_Class\_ID**

Assigned Power Saving Class identifier. The ID shall be unique within the group of Power Saving Classes associated with the MS. This ID may be used in further MOB\_SLP-REQ/RSP messages for activation/deactivation of Power Saving Class

...

**[Change the Table 108e—Traffic-Indication (MOB\_TRF-IND) message format on Page 97, Line54 as follows]**

**Table 108e—Traffic-Indication (MOB\_TRF-IND) message format**

Syntax	Size (bits)	Notes
MOB_TRF-IND_Message_Format() {		
Management message type = 52	8	
<b>FMT</b>		
<b>if(FMT == 0) {</b>		
SLPID Group Indication bit-map	32	
Traffic Indication Bitmap	<i>variable</i>	
<b>} else {</b>		
<b>Num-Pos</b>	<u>8</u>	<b>Number of CIDs following</b>
<b>for (i=0; I &lt; Num-Pos; i++) {</b>		
<b>Short Basic CIDs</b>	<u>12</u>	
<b>1</b>		
<b>1</b>		
TLV encoded items	<i>variable</i>	
}		

