Abstract

This contribution proposes some changes on Sleep mode.
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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Size (bits)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening-window</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>final-sleep window base</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>}</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Size (bits)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```plaintext
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  8
        Sleep_Approved  1
        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
            }
        } else {
            if (Definition = 1) {
                Power_Saving_Class_Type  2
                Direction  2
                if (Sleep_approved == 0) {
                    REQ-duration  8
                } else {
                    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
                    }
                }
            } else {
                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  variable
    if (Operation = 1) {
```

Parameters shall be as follows:

**Length_of_Data**
Number of bytes in following specification of Power Saving Class

**Sleep_Approved**
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_Approved = 0 in it.

**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

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**Table 108e—Traffic-Indication (MOB_TRF-IND) message format on Page 97, Line 54 as follows**

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