Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Proposed text and ASN.1 code to support MOB_PAG-ADV**
Date Submitted	**2007-03-13**
Source(s)	Joey Chou [mailto:joey.chou@intel.com] Intel Corporation
Re:	
Abstract	This contribution proposes the text and ASN.1 code in wmanIf2mMib to support MOB_PAG-ADV message.
Purpose	Adoption
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 (Version 1.0) <http://ieee802.org/16/ipr/patents/policy.html>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing 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:r.b.marks@ieee.org> as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site <http://ieee802.org/16/ipr/patents/notices>.

Table of Content

1

1

1. Introduction

This contribution proposes the text and ASN.1 code in wmanIf2mMib to support MOB_PAG-ADV message.

2. Proposed changes

2.1 wmanIf2mMib Change

13.1.4.1 wmanIf2mBsObjects

13.1.4.1.1 wmanIf2mBsCm

[Change Figure 19 as the following:]


```
wmanIf2mBsCm
     ┣━━ wmanIf2mBsCapability
     ┃         ┣━━ wmanIf2mBsSsReqCapabilitiesTable
     ┃         ┣━━ wmanIf2mBsSsRspCapabilitiesTable
     ┃         ┣━━ wmanIf2mBsBasicCapabilitiesTable
     ┃         ┗━━ wmanIf2mBsCapabilitiesConfigTable
     ┣━━ wmanIf2mBsPowerSavingMode
     ┃         ┣━━ wmanIf2mBsSsPowerSavingStatusTable
     ┃         ┗━━ wmanIf2mBsSsPowerSavingClassesTable
     ┣━━ wmanIf2mBsNeighborAdv
     ┃         ┣━━ wmanIf2mBsNeighborAdvCommonTable
     ┃         ┣━━ wmanIf2mBsNeighborAdertizementTable
     ┃         ┣━━ wmanIf2mBsNeighborOfdmaUcdTable
     ┃         ┗━━ wmanIf2mBsNeighborOfdmaDcdTable
     ┣━━ wmanIf2mBsPaging
     ┃         ┣━━ wmanIf2mBsPagingAdvertizementTable
     ┃         ┣━━ wmanIf2mBsMsPagedTable
     ┃         ┗━━ wmanIf2mBsPagingGroupsTable
     ┗━━ wmanIf2mBsConfigurationTable
```
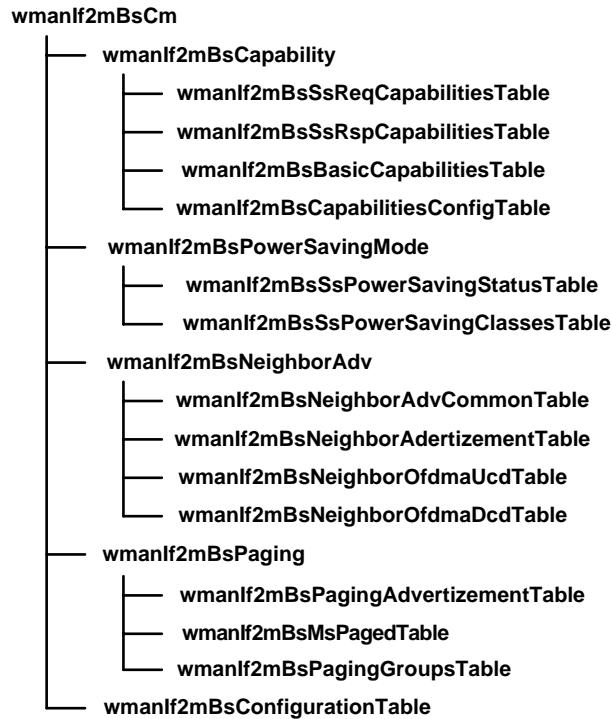
Figure 19—wmanIf2mBsCm structure

[Add the following text to subclause 13.1.4.1.1:]

13.1.4.1.1.4 wmanIf2mBsPaging

13.1.4.1.1.4.1 wmanIf2mBsPagingAdvertizementTable

wmanIf2mBsPagingAdvertizementTable contains the attributes that BS broadcasts in the MOB_PAG-ADV message.

13.1.4.1.1.4.2 wmanIf2mBsMsPagedTable

wmanIf2mBsMsPagedTable contains the MSs that are paged in the MOB_PAG-ADV message.

13.1.4.1.1.4.2 wmanIf2mBsPagingGroupsTable

wmanIf2mBsPagingGroupsTable contains paging group IDs that BS can broadcast in the MOB_PAG-ADV message.

2.2 ASN.1 Code Change

13.2 ASN.1 Definitions of MIB Modules

13.2.4 wmanIf2mMib

[Add the following code to WMAN-IF2m-MIB:]


```
WmanIf2mPagingAction ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
            "Paging action instruction to MS
             0b00 = No Action Required
             0b01 = Perform Ranging to establish location and
                    acknowledge message
             0b10 = Enter Network"
        REFERENCE
            "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
        SYNTAX       INTEGER {noAction(0),
                              performRanging(1),
                              enterNetwork(2)}


WmanIf2mSsMacAddrHash ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
          "24 bit SS MAC address hash that is obtained by computing a
           CRC24 on the MS 48-bit MAC address."
        REFERENCE
            "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
        SYNTAX       OCTET STRING (SIZE(3))

wmanIf2mBsPaging OBJECT IDENTIFIER ::= { wmanIf2mBsCm 4 }

-- XXX
-- wmanIf2mBsPagingAdvertizementTable
--
wmanIf2mBsPagingAdvertizementTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF WmanIf2mBsPagingAdvertizementEntry
        MAX-ACCESS   not-accessible
        STATUS        current
        DESCRIPTION
            " This table contains the attributes that BS broadcasts in
              the MOB_PAG-ADV message."
        REFERENCE
            "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
```

```
1                ::= { wmanIf2mBsPaging 1 }
2
3    wmanIf2mBsPagingAdvertizementEntry OBJECT-TYPE
4            SYNTAX      WmanIf2mBsPagingAdvertizementEntry
5            MAX-ACCESS  not-accessible
6            STATUS      current
7            DESCRIPTION
8               "This table is indexed by ifIndex."
9            INDEX { ifIndex }
10           ::= { wmanIf2mBsPagingAdvertizementTable 1 }
11
12   WmanIf2mBsPagingAdvertizementEntry ::= SEQUENCE {
13           wmanIf2mBsPagingGroupListIndex           INTEGER,
14           wmanIf2mBsPagingRspWindow                INTEGER,
15           wmanIf2BsPagingAdvRowStatus              RowStatus}
16
17   wmanIf2mBsPagingGroupListIndex OBJECT-TYPE
18           SYNTAX      INTEGER (0 .. 65535)
19           MAX-ACCESS  read-create
20           STATUS      current
21           DESCRIPTION
22             "wmanIf2mBsPagingGroupListIndex maps to
23              wmanIf2mBsPagingGroupListId in wmanIf2mBsPagingGroupsTable
24              , and is used to identify the list of paging group IDs."
25           ::= { wmanIf2mBsPagingAdvertizementEntry 1 }
26
27   wmanIf2mBsPagingRspWindow OBJECT-TYPE
28           SYNTAX      INTEGER (0 .. 255)
29           UNITS       "Frames"
30           MAX-ACCESS  read-create
31           STATUS      current
32           DESCRIPTION
33             "OFDMA-PHY specific parameter used to indicate the time
34              window during which the MS shall transmit the CDMA code at
35              the transmission opportunity assigned in the CDMA code and
36              transmission opportunity assignment TLV. The start of the
37              window is the next frame after receiving the MOB_PAG-ADV."
38           REFERENCE
39              "Subclause 11.17.2 in IEEE Std 802.16e-2005"
40           ::= { wmanIf2mBsPagingAdvertizementEntry 2 }
41
42   wmanIf2BsPagingAdvRowStatus OBJECT-TYPE
43           SYNTAX        RowStatus
44           MAX-ACCESS    read-create
45           STATUS        current
46           DESCRIPTION
47              "This object is used to ensure that the write, create,
48               delete operation to multiple columns is guaranteed to
49               be treated as atomic operation by agent."
50           ::= { wmanIf2mBsPagingAdvertizementEntry 3 }
51
52   wmanIf2mBsMsPagedTable OBJECT-TYPE
53           SYNTAX      SEQUENCE OF WmanIf2mBsMsPagedEntry
54           MAX-ACCESS  not-accessible
55           STATUS      current
56           DESCRIPTION
57              "This table contains the MSs that are paged in the
58               MOB_PAG-ADV message."
59           REFERENCE
60              "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
61           ::= { wmanIf2mBsPaging 2 }
62
63   wmanIf2mBsMsPagedEntry OBJECT-TYPE
64           SYNTAX      WmanIf2mBsMsPagedEntry
```

```
1              MAX-ACCESS  not-accessible
2              STATUS      current
3              DESCRIPTION
4                  "This table is indexed by wmanIf2mBsSsMacAddress."
5              INDEX { wmanIf2mBsSsMacAddress }
6              ::= { wmanIf2mBsMsPagedTable 1 }
7
8      WmanIf2mBsMsPagedEntry ::= SEQUENCE {
9              wmanIf2mBsSsMacAddrHash                 WmanIf2mSsMacAddrHash,
10             wmanIf2mBsPagingActionCode              WmanIf2mPagingAction,
11             wmanIf2mBsCdmaCode                      INTEGER,
12             wmanIf2mBsTransmitOpportunity           INTEGER}
13
14     -- XXX
15     wmanIf2mBsSsMacAddrHash OBJECT-TYPE
16             SYNTAX      WmanIf2mSsMacAddrHash
17             MAX-ACCESS  read-only
18             STATUS      current
19             DESCRIPTION
20               "The hash is obtained by computing a CRC24 on the MS 48-bit
21                  MAC address. The polynomial for the calculation is
22                  0x1864CFB"
23             REFERENCE
24                 "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
25             ::= { wmanIf2mBsMsPagedEntry 1 }
26
27     -- XXX
28     wmanIf2mBsPagingActionCode OBJECT-TYPE
29             SYNTAX      WmanIf2mPagingAction
30             MAX-ACCESS  read-only
31             STATUS      current
32             DESCRIPTION
33               "Paging action instruction to MS."
34             REFERENCE
35                 "Subclause 6.3.2.3.56, Table 109p in IEEE Std 802.16e-2005"
36             ::= { wmanIf2mBsMsPagedEntry 2 }
37
38     -- XXX
39     wmanIf2mBsCdmaCode OBJECT-TYPE
40             SYNTAX      INTEGER (0 .. 255)
41             MAX-ACCESS  read-only
42             STATUS      current
43             DESCRIPTION
44                 "OFDMA-PHY specific parameter used to indicate CDMA code
45                  and assigned to one or more MSs being paged in this
46                  message. One CDMA code assignment in the TLV corresponds
47                  to one MS paged. If wmanIf2mBsPagingActionCode is 'No
48                  Action Required', then it should return 0."
49             REFERENCE
50                 "Subclause 11.17.1 in IEEE Std 802.16e-2005"
51             ::= { wmanIf2mBsMsPagedEntry 3 }
52
53     -- XXX
54     wmanIf2mBsTransmitOpportunity OBJECT-TYPE
55             SYNTAX      INTEGER (0 .. 65535)
56             MAX-ACCESS  read-only
57             STATUS      current
58             DESCRIPTION
59                 "OFDMA-PHY specific parameter used to indicate transmission
60                  opportunity assigned to one or more MSs being paged in
61                  this message. One transmission opportunity assignment in
62                  the TLV corresponds to one MS paged. If
63                  wmanIf2mBsPagingActionCode is 'No Action Required', then
64                  it should return 0."
```

```
1              REFERENCE
2                  "Subclause 11.17.1 in IEEE Std 802.16e-2005"
3              ::= { wmanIf2mBsMsPagedEntry 4 }
4
5      -- XXX
6      wmanIf2mBsPagingGroupsTable OBJECT-TYPE
7              SYNTAX       SEQUENCE OF WmanIf2mBsPagingGroupsEntry
8              MAX-ACCESS   not-accessible
9              STATUS       current
10             DESCRIPTION
11                 "This table contains paging group IDs that BS can broadcast
12                  in the MOB_PAG-ADV message."
13             REFERENCE
14                 "Table 109f and Table 358 in IEEE Std 802.16e-2005"
15             ::= { wmanIf2mBsPaging 3 }
16
17     wmanIf2mBsPagingGroupsEntry OBJECT-TYPE
18             SYNTAX       WmanIf2mBsPagingGroupsEntry
19             MAX-ACCESS   not-accessible
20             STATUS       current
21             DESCRIPTION
22                 "This table is doubled indexed by
23                  wmanIf2mBsPagingGroupListId and wmanIf2mBsPagingGroupId.
24                  Each entry contains a paging group ID. If multiple paging
25                  group IDs are to be formed in a list that will be
26                  broadcast by a BS, these paging group IDs should be
27                  identified by the same wmanIf2mBsPagingGroupListId value."
28             INDEX { wmanIf2mBsPagingGroupListId,
29                     wmanIf2mBsPagingGroupId }
30             ::= { wmanIf2mBsPagingGroupsTable 1 }
31
32     WmanIf2mBsPagingGroupsEntry ::= SEQUENCE {
33             wmanIf2mBsPagingGroupListId              INTEGER,
34             wmanIf2mBsPagingGroupId                  INTEGER,
35             wmanIf2BsPagingGroupsRowStatus           RowStatus}
36
37     -- XXX
38     wmanIf2mBsPagingGroupListId OBJECT-TYPE
39             SYNTAX       INTEGER (0 .. 65535)
40             MAX-ACCESS   not-accessible
41             STATUS       current
42             DESCRIPTION
43                 "The index to the wmanIf2mBsPagingGroupsTable."
44             REFERENCE
45                 "Table 109f in IEEE Std 802.16e-2005"
46             ::= { wmanIf2mBsPagingGroupsEntry 1 }
47
48     -- XXX
49     wmanIf2mBsPagingGroupId OBJECT-TYPE
50             SYNTAX       INTEGER (0 .. 65535)
51             MAX-ACCESS   not-accessible
52             STATUS       current
53             DESCRIPTION
54                 "This field indicates the ID of the paging group."
55             REFERENCE
56                 "Subclause 6.3.2.3.47, Table 109f in IEEE Std 802.16e-2005"
57             ::= { wmanIf2mBsPagingGroupsEntry 2 }
58
59     wmanIf2BsPageingGroupsRowStatus OBJECT-TYPE
60             SYNTAX         RowStatus
61             MAX-ACCESS     read-create
62             STATUS         current
63             DESCRIPTION
64                 "This object is used to ensure that the write, create,
```

```
          delete operation to multiple columns is guaranteed to
          be treated as atomic operation by agent."
::= { wmanIf2mBsPagingGroupsEntry 3 }
```