Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>
Title	**ASN.1 coding for AAI-SCD message in IEEE 802.16.1a**
Date Submitted	**2012-09-13**
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Re:	In response to Sponsor Ballot on P802.16.1a
Abstract	ASN.1 coding for AAI-SCD message in GRIDMAN Draft Standard
Purpose	To discuss and adopt the proposed text in the draft amendment document on GRIDMAN
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ASN.1 coding for AAI-SCD message in IEEE 802.16.1a

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1. Introduction

This document provides ASN.1 encoding for AAI-SCD message in P802.16.1a.

2. References

[1] IEEE 802.16-12-0132-00, GRIDMAN System Requirement Document including SARM annex, January 2012.
[2] IEEE P802.16n^{TM}/D5, Air Interface for Broadband Wireless Access Systems - Draft Amendment: Higher Reliability Networks, June 2012.
[3] IEEE P802.16.1a^{TM}/D5, WirelessMAN-Advanced Air Interface for Broadband Access Systems - Draft Amendment: Higher Reliability Networks, June 2012.
[4] IEEE P802.16^{TM}-2012, IEEE Standard for Air Interface for Broadband Wireless Access Systems," August 2012.
[5] IEEE P802.16.1^{TM}-2012, IEEE Standard for WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems, September 2012.

3. Proposed Text on the IEEE 802.16.1a Amendment Draft Standard

[------------------------------------Start of Text Proposal---]

[Remedy: Add the following text in line#24, page 237, P802.16.1a/D5]

```
-- +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
-- AAI-SCD message
-- +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
AAI-SCD ::=                     SEQUENCE {
       configChangeCount              INTEGER (0..15),
       bsRestartCount                 INTEGER (0..15),
       -- SA Preamble partition per ABS type
       -- 1: macro hot-zone,
       -- 2: Relay,
       -- 3: OSG femto,
       -- 4: CSG-open femto
       -- 5: CSG-closed femto ABSs
       -- Indicates the SA-Preamble partition information.
       -- Each 4 bits represent a partition range for each cell type,
       -- as defined in 6.3.5.1.2 and Table 165
       saPreamblePartitions           SEQUENCE (SIZE (5)) OF PreamblePart,
       triggers                       TriggerConditions,
       defaultTriggerAveParamForIntra ENUMERATED {
                                             one,
                                             half,
                                             quarter,
```

```
                                        one-8th,
                                        one-16th,
                                        one-32th,
                                        one-64th,
                                        one-128th,
                                        one-256th,
                                        one-512th
                                },

        defaultTriggerAveParamForInter ENUMERATED {
                                        one,
                                        half,
                                        quarter,
                                        one-8th,
                                        one-16th,
                                        one-32th,
                                        one-64th,
                                        one-128th,
                                        one-256th,
                                        one-512th
                                },

        olMimoParameters                SEQUENCE {
                olRegionType0On                 BOOLEAN,
                olRegionType1NLRUSize           INTEGER (0..15),
                olRegionType1SLRUSize           INTEGER (0..15),
                olRegionType2SLRUSize           INTEGER (0..15)
        } OPTIONAL,

        rangingSyncInfo                 RangingSyncInfo                                 OPTIONAL,
        periodOfPeriodicRngTimer        PeriodOfPeriodicRngTimer,
        ulpcDataChannelIe               UlpcDataChannelSet,
        ulpcControlChannelIe            UlpcControlChannelSet,
        tReTxInterval                   TReTxInterval,
        -- BR Channel Configuration MIN Access Class for frame i, i+1, i+2,
        -- and i+3 frame
        brChCfgMINAccessClassForFrame SEQUENCE (SIZE (4)) OF SEQUENCE {
                accessClass                     INTEGER (0..3)                          OPTIONAL
        },

        -- Sounding sequence
        -- D is decimation value for frequency decimation multiplexing
        -- P is number of codes for code division multiplexing
        -- Present when Uplink AAI subframes for sounding in S-SFH SP1 is
        -- not set to 0b000
        multiplexingType                MultiplexingType,
        shiftValueUForSoundingSymbol    INTEGER (0..255),
        relayZoneAmsAlocIndc            INTEGER (0..1)                                  OPTIONAL,
        embsConfigParameters            EMBSConfigParameters                            OPTIONAL,
        ulFeedbackInfoArray             SEQUENCE (SIZE (1..8)) OF SEQUENCE {
                primaryCarrierIndex             PhyCarrierIndex                         OPTIONAL,
                -- The start DLRUs index for feedback channel
                startDLRUIndex                  INTEGER (0..127),
                -- The number of DLRUs for feedback channel per UL AAI sub-frame
                -- (Refer to 6.3.8.3.3.2)
                numberOfDLRUs                   INTEGER (0..15),
                -- The number of HARQ feedback channel per HARQ feedback region.
                -- Describes LHFB in 6.3.7.3.3.2. Channel numbers represented
                -- by the two bits (0, 1, 2, 3) are as follows.
                -- For 512 FFT size, 6, 12, 18, 24
                -- For 1024 FFT size, 6, 12, 24, 30
                -- For 2048 FFT size, 12, 24, 48, 60
                numberOfHARQChannels HarqfdbkChannels
        } OPTIONAL,
        -- See Table 152 to TTable 154.
```

```
-- Resource_Metric_FP2
-- Resource Metric of the first power deboosted frequency partition
-- which is defined in Table 141. This parameter does not affect
-- "Configuration Change Count"
resourceMetricFP2                   INTEGER (0..15)                     OPTIONAL,
-- See Table 149 to Table 151
-- Resource_Metric_FP3
-- Resource Metric of the second power deboosted frequency partition
-- which is defined in Table 141. This parameter does not affect
-- "Configuration Change Count"
resourceMetricFP3                   INTEGER (0..15)                     OPTIONAL,
-- Indicates whether ABS achives synchronization from backhaul
-- network (0b01) or not (0b00)
networkSynchronization              BOOLEAN                             OPTIONAL,

-- Start for HR-Network
initialRangingBackoffStart          INTEGER (0..15)                     OPTIONAL,
initialRangingBackoffEnd            INTEGER (0..15)                     OPTIONAL,
hrMulticastGroupZoneId              HRMulticastGroupZoneID              OPTIONAL,
hrMulticastIndicationCycle          HRMulticastIndicationCycle          OPTIONAL,
hrMultimodeIndication               HRMultimodeIndication               OPTIONAL,
offsetMaxFwdC                       INTEGER (0..63)                     OPTIONAL,
-- It represents the value among -15.5 to 16 dB with 0.5 dB step
offsetMinFwdC                       INTEGER (0..255)                    OPTIONAL,
-- It represents the value among -15.5 to 16 dB with 0.5 dB step
offsetMaxFwdD                       INTEGER (0..63)                     OPTIONAL,
-- It represents the value among -15.5 to 16 dB with 0.5 dB step
offsetMinFwdD                       INTEGER (0..63)                     OPTIONAL,
-- It represents the value among -15.5 to 16 dB with 0.5 dB step
deltaXlT                            INTEGER (0..15)                     OPTIONAL,
--  It has 4 bits to represent the value among
-- {0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5}.
-- It is different for each frequency partition (FP0, FP1, FP2, FP3).
deltaXlX                            INTEGER (0..15)                     OPTIONAL,
--  It has 4 bits to represent the value among
-- {0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5}.
-- It is different for each frequency partition (FP0, FP1, FP2, FP3).
blindPagingOffset                   INTEGER (0..4095)                   OPTIONAL,
blindPagingCycle                    INTEGER (0..15)                     OPTIONAL,
logicalChannel                      SEQUENCE (SIZE (1..8)) OF SEQUENCE {
        p                                   INTEGER (0..7),
        -- # of 2^p
        nOfSize                             INTEGER (0..4095)
} OPTIONAL,
nFrame                              ENUMERATED {
-- delay in frames between starting frame for the reception of multicast
-- the first frame of feedback channel associated with it
                                            oneFrame,
                                            twoFrames,
                                            threeFrames,
                                            fourFrames
                                    }       OPTIONAL,
kSubframe                           ENUMERATED {
                                            first,
                                            second,
                                            third,
                                            fourth,
                                            fifth,
                                            sixth,
                                            seventh
                                    }       OPTIONAL,
feedbackRngFormat                   ENUMERATED {
                                            sRCH,
                                            nsRCH0,
                                            nsRCH1
```

```
                                        }       OPTIONAL,
        subcarrierStart                 INTEGER (0..2047)               OPTIONAL,
        startCodeIndex                  INTEGER (0..255)                OPTIONAL,
        codeSpcing                      INTEGER (0..15)                 OPTIONAL,
        totalNumOfCodes                 INTEGER (0..255)                OPTIONAL,
        -- end for HR-Network
        ...

}
```

[----------End of Text Proposal----------]