

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	ASN.1 coding for FTN messages in IEEE 802.16.1a	
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Re:	In response to Sponsor Ballot Recirculation #1 on P802.16.1a	
Abstract	ASN.1 coding for BS-controlled FTN messages 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 FTN messages in IEEE 802.16.1a

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1. Introduction

This document provides ASN.1 encoding for BS-controlled FTN messages in P802.16.1a, including:

- AAI-FN-CONFIG-CMD
- AAI-FN-RNG-ACK
- AAI-FN-RNG-FLU
- AAI-MSPG-GRP
- AAI-MSPG-PG

2. References

- [1] IEEE 802.16-12-0132-00, GRIDMAN System Requirement Document including SARM annex, January 2012.
- [2] IEEE P802.16nTM/D6, Air Interface for Broadband Wireless Access Systems - Draft Amendment: Higher Reliability Networks, October 2012.
- [3] IEEE P802.16.1aTM/D6, WirelessMAN-Advanced Air Interface for Broadband Access Systems - Draft Amendment: Higher Reliability Networks, October 2012.
- [4] IEEE P802.16TM-2012, IEEE Standard for Air Interface for Broadband Wireless Access Systems, August 2012.
- [5] IEEE P802.16.1TM-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-----]

[Remedy1: Add the following text in line#4, page 238, P802.16.1a/D6:]

```
-- HR Power Control configuration
aaiHrPcc          AAI-HR-PCC,
```

[Remedy2: Add the following text in line#46, page 238, P802.16.1a/D6:]

```
-- BS controlled HR-MS forwarding to network
aaiFnConfigCmd   AAI-FN-CONFIG-CMD,
aaiFnRngAck      AAI-FN-RNG-ACK,
aaiFnRngFlu      AAI-FN-RNG-FLU,
```

```

1      aaiMspgGrp           AAI-MSPG-GRP,
2      aaiMspgPg           AAI-MSPG-PG,

```

[Remedy3: Add the following text in line#46, page 282, P802.16.1a/D6:]

```

7  -- BS controlled HR-MS forwarding to network
8      aaiFnConfigCmd       AAI-FN-CONFIG-CMD,
9      aaiFnRngAck         AAI-FN-RNG-ACK,
10     aaiFnRngFlu         AAI-FN-RNG-FLU,
11     aaiMspgGrp          AAI-MSPG-GRP,
12     aaiMspgPg           AAI-MSPG-PG,

```

[Remedy4: Add the following text in line#30, page 296, P802.16.1a/D6:]

```

18  -- *-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
19  -- BS-Controlled FTN Messages
20  -- *-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
21
22  -- +--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
23  -- AAI-FN-CONFIG-CMD Message
24  -- +--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
25
26  FdmUlPuseZone ::= SEQUENCE {
27      subframeOffsetRch          INTEGER (0..3),
28      startRpCodInfoRch         INTEGER (0..15),
29      numRpCodesForCoverageExtRng INTEGER (0..3)
30  }
31
32  NoFdmUlPuscZone ::= SEQUENCE {
33      subframeOffsetRch          INTEGER (0..3),
34      startRpCodInfoRch         INTEGER (0..15),
35      txTimeOffsetSRch          INTEGER (0..7)
36  }
37
38  PostAccessParamPreAssign ::= SEQUENCE {
39      postIdCell                 INTEGER (0..1023),
40      numberOfSuperframeNCI      INTEGER (0..3),
41      startRpCodInfoSRch        INTEGER (0..15),
42      numberOFRNGOpportunity      INTEGER (0..3),
43      subframeOffsetRch         INTEGER (0..3)
44  }
45
46  -- BS controlled HR-MS forwarding to network
47  AAI-FN-CONFIG-CMD ::= SEQUENCE {
48      superframeNumActionLSB4    INTEGER (0..15),
49      idCell                     INTEGER (0..1023),
50      numberOfPreambleOnlySuperframe INTEGER (0..15),
51      numberOfSuperframesWithNCI INTEGER (0..3),
52      subframeIndexNCI          INTEGER (0..7),
53      lruStartingIndexNCI       INTEGER (0..63),
54      frameContainingRngOpportunity ENUMERATED {
55          second,
56          fourth
57      },
58      numberOfRngOpportunity      INTEGER (0..3),
59      supportFdmUlPUSCZone       CHOICE {
60          supportFdmUlPuscZone   FdmUlPuseZone,
61          noSupportFdmUlPuscZone NoFdmUlPuscZone
62      },
63      hrMsPreambleTimingAdvance INTEGER (0..2047)          OPTIONAL,
64      hrMsEirp                  INTEGER (0..31),
65

```

```

1      hrMstoHrMsFbRrcIndex          INTEGER (0..2047)          OPTIONAL,
2      hrMrtoHrMsRepRrcIndex        INTEGER (0..2047)          OPTIONAL,
3      threshold2PhaseDiscovery      INTEGER (0..7)            OPTIONAL,
4      postAccessParmPreAssign       PostAccessParamPreAssign  OPTIONAL,
5      ...
6  }
7
8  -- ++++-----
9  -- AAI-FN-RNG-ACK Message
10 -- ++++-----
11 -- ++++-----
12 RNGStatusSuccessContinue ::= SEQUENCE {
13     adjustParamIndication          BIT STRING {
14         offsetAdjustInd            (0),
15         powerLevelAdjustInd        (1),
16         freqOffsetAdjustInd        (2)
17     }
18     timingOffsetAdjust              INTEGER (0..32767)          OPTIONAL,
19     powerLevelAdjust                INTEGER (0..15)            OPTIONAL,
20     freqOffsetAdjust                INTEGER (0..511)            OPTIONAL
21 }
22
23
24
25 AAI-FN-RNG-ACK ::= SEQUENCE {
26     rcvCodes                        SEQUENCE (SIZE(0..15)) OF SEQUENCE {
27         rngPreambleCodeIndex       INTEGER (0..3),
28         rngStatus                   ENUMERATED {
29             success,
30             continue,
31             abort,
32             secondPhase
33         }
34         rngStatusSuccessContinue    RNGStatusSuccessContinue  OPTIONAL
35     }
36     ...
37 }
38
39 -- ++++-----
40 -- AAI-FN-RNG-FLU Message
41 -- ++++-----
42 -- ++++-----
43 AAI-FN-RNG-FLU ::= SEQUENCE {
44     numRngCodes                     SEQUENCE (SIZE(0..15)) OF SEQUENCE {
45         rngCodeIndex               INTEGER (0..3),
46         frameIndex                 INTEGER (0..15),
47         subframeOffsetOfRcvRngPreamble  INTEGER (0..3)
48     }
49     ...
50 }
51
52 -- ++++-----
53 -- AAI-MSPG-GRP Message
54 -- ++++-----
55 -- ++++-----
56 AAI-MSPG-GRP ::= SEQUENCE {
57     purpose                          BOOLEAN, -- 0: remove, 1: add
58     pagerGroupID                     INTEGER (0..255)
59 }
60
61 -- ++++-----
62 -- AAI-MSPG-PG Message
63 -- ++++-----
64 MsPgSupportFGmUlPusc ::= SEQUENCE {
65     subframeOffsetRch                INTEGER (0..3),

```

```

1      startRpCodInfoRch          INTEGER (0..15),
2      numRpCodAlloc              INTEGER (0..63)
3
4  }
5
6  MsPgSupportAAI ::= SEQUENCE {
7      piPid                      INTEGER (0..4095),
8      startRpCodInfoRch          INTEGER (0..15),
9      numRpCodAlloc              INTEGER (0..63)
10 }
11
12
13 AAI-MSPG-PG ::= SEQUENCE {
14     pagerGroupID                INTEGER (0..255)                OPTIONAL,
15     mspgPgupportFdmUlPusc       SEQUENCE (SIZE (0..63)) OF MsPgSupportFdmUlPusc  OPTIONAL,
16     mspgPgupportAAI            SEQUENCE (SIZE (0..63)) OF MsPgSupportAAI        OPTIONAL
17 }
18 }
19
20 [-----End of Text Proposal-----]
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