Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
Title	**System Profile (2 – 11 GHz Licensed) for OFDMA Using AAS and ACP Options**
Date Submitted	2003-01-10
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Re:	This is in response to the Call for Contributions **802.16d-02/01** for System Profiles in the 2-11 GHz frequency bands as covered by amendment 802.16a
Abstract	This Profile is for a BWA System providing Adaptive Multibeam (AMB) non-LOS coverage in the 2-11 GHz licensed frequency bands using the 802.16a OFDMA air interface. The System is optimized for TDD duplexing and Adaptive Antenna System (AAS) operation using the Adjacent Carrier Permutation (ACP) option of the Standard. This system supports single or multi-channel configurations with full frequency reuse both within a cell and between cells resulting in payload efficiency up to 10-15 Mb/s per MHz of wide area spectrum allocation.
Purpose	This information can be reviewed by the WG during Meeting #23 (San Jose) and incorporated into the proposed Amendment 802.16d to the Standard.
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4. Abbreviations and acronyms

Insert, maintaining alphabetical order:

ACP Adjacent Carrier Permutation (OFDMA AAS only)
DCP Distributed Carrier Permutation (OFDMA only)

8.5.6.3 Optional permutations for AAS

1st Line - "distributed carrier permutation" becomes "distributed carrier permutation (DCP)"
2nd Line - "adjacent carrier permutation" becomes "adjacent carrier permutation (ACP)"

Section 12 : Insert the following sub-paras :

12.x OFDMA System Profile Using AAS and ACP Options

This Profile is for a BWA System providing Adaptive Multibeam (AMB) non-LOS coverage in the 2-11 GHz licensed frequency bands using the WirelessMAN OFDMA air interface. The System is optimized for TDD duplexing, ARQ and Adaptive Antenna System (AAS) operation using the Adjacent Carrier Permutation (ACP) option of the OFDMA Standard. This system supports single or multi-channel configurations with full frequency reuse both within a cell and between cells resulting in payload efficiency up to 10-15 Mb/s per MHz of wide area spectrum allocation. This Profile does NOT support MSH or STC options of the Standard.

12.x.1 MAC Messages

For this Profile, the MAC messages below and the corresponding functionality are always mandatory to implement:
   DL-MAP and UL-MAP (incl AAS_IE)

DCD
DSA-ACK, DSA-REQ, DSA-RSP, DSC-ACK, DSC-REQ, DSC-RSP
DSD-RSP
DSX-RVD
UCD
CLK-CMP
DBPC-REQ and DBPC-RSP
DREG-CMD
PKM-REQ and PKM-RSP
SBC-REQ and SBC-RSP
TFTP-CPLT and TFTP-RSP
RES-CMD
MCA-REQ and MCA-RSP
RNG-REQ (incl AAS broadcast capability) and RNG-RSP (incl. AAS broadcast permission)
REP-REQ and REP-RSP
ARQ-Feedback , ARQ-Discard and ARQ-Reset
AAS-FBCK-REQ and AAS-FBCK-RSP

12.x.2 MAC Support of PHY

Optimized for minimal non-AAS sub-frame (i.e. non-broadcast)
Optimized for support of AAS enabled SS
Optimized for the use of ACP option for AAS enabled SS
Optimized for the use of AAS alert_slots process for AAS enabled SS
Optimized for the use of BS polling process for SS bandwidth requests

Note : Although the Standard requires these systems to also support the mandatory non-AAS and DCP-AAS
capability, this might have significant negative impact on cell capacity and spectrum utilization efficiency, which
operators will need to factor into their deployment and planning assumptions if they choose to offer these
capabilities.

12.x.3 PHY Options and Parameters

Channel = 1.25MHz TDD
Frame Duration Code = 2 (3.5ms nominal, 3.33ms actual)
Frame Structure = 6 symbols (DL), 1 symbol guard interval, 3 symbols (UL) = 10 symbols / frame.
FEC / BTC / CTC / Modulation = TBD