Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Concatenation of MIMO and AAS operations**
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Re:	IEEE 802.16e D2 Draft
Abstract	Concatenation of MIMO and AAS operations
Purpose	To incorporate the changes here proposed into the 802.16e D2 draft.
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Concatenation of MIMO and AAS operations

1 Background

One of the major AAS technologies is to use fixed beam-forming at cell site to achieve higher order sectorization in the DL, such a configuration is particular effective to support mobile service and reduce infrastructure cost of the AAS. However, it is desirable to apply MIMO transmission within each beam to further enhance the user data throughput.

2 Concatenation of MIMO and AAS

The fixed or steered multi-beam technology can be concatenated with MIMO transmission as a form of higher order sectorziation to further increase the overall network capacity. In this configuration, the MIMO OFDMA PHY and MAC operate independently within each SDMA beam. Each MSS can perform best beam selection and connects to one of the serving beam or can be in the multi-beam soft hand off connection. The multi-beam MIMO configuration is shown in Figure 1.

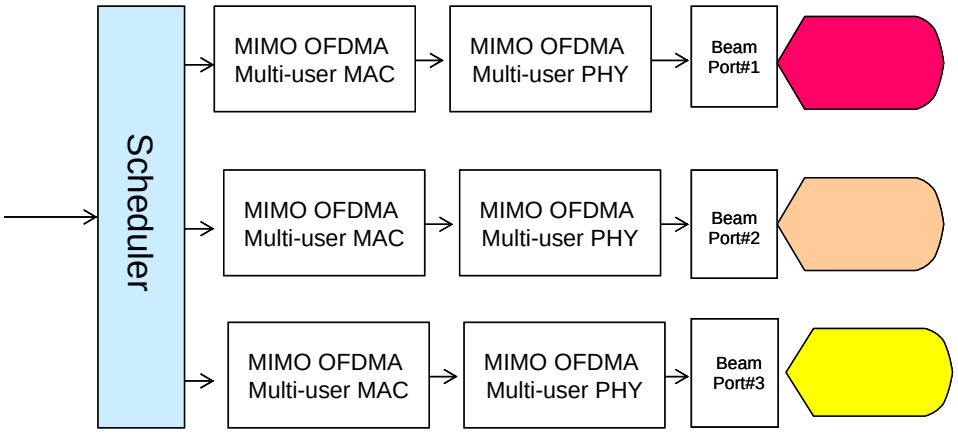

Figure 1 Cell site architecture of the multi-beam MIMO

The concatenation of MIMO and multi-beam is a practical and straightforward solution to harmonize the MIMO and AAS technologies; it offers the most system multiplicative capacity gains of both MIMO and multi-beam.
The MIMO transmission can be mapped onto polarization diversity transmission and multi-beam can be either fixed beam or steering beam. We need to enhance current specification to support concatenation operation of MIMO and AAS.

3 Text proposal

TDB