Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Correction to the example of OFDMA uplink CC encoding**
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Re:	IEEE 802.16 WG Sponsor Ballot on P802.16-2004/Cor1/D4
Abstract	This contribution is to make correction to the example of OFDMA uplink CC encoding.
Purpose	To incorporate the test vectors in this contribution into P802.16-2004/Cor1/D5.
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Correction to the example of OFDMA uplink CC encoding

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1. Problem Statement

In section 8.4.9.4.4 of P80216_Cor1_D4, an example of one burst of OFDMA uplink using mandatory structure is provided. However, there are errors in subcarrier randomization sequence. Therefore the results of mapping the modulated data onto subcarriers are missing from the standard.

2. Proposed solutions

The Symbol_Offset for uplink is no longer starting from the first symbol of the downlink subframe. The Symbol_Offset is counted from the first symbol of the uplink subframe as 0. OFDM symbol number start = 35 in the uplink example doesn't make sense anymore, it becomes contradictive with the "first time slot" assumption. OFDM symbol number start should be set to 0. The following text changes provide the correct subcarrier randomization sequences, and mapping of the I/Q data and pilot values onto subcarriers.

3. Specific text changes

=== Start text changes ====

[Modify the following text in section 8.4.9.4.4 Example of OFDMA uplink CC encoding]

1) OFDM symbol number start = 0~~35, mapping from slot 0~~
2) Number of time slots in UL allocation = 2
3) Starting Logical Slot = 16 (mapped onto physical subchannel 16 in the first time slot and physical subchannel ~~17~~29 in the second time slot due to subchannel rotation)
4) IDcell~~UL_PermBase~~ = 5
~~5) Segment = 0~~
5~~6~~) Modulation = QPSK
6~~7~~) Coding scheme = Convolutional coding
7~~8~~) Coding rate = 1/2
8~~9~~) Frame Number = 5

~~Mapping~~These results shall be mapped onto subcarriers and multiply~~ing~~ied by PN [assuming the use of logical data subchannel 16, mapped onto physical subchannel 16 in the first time slot and to physical subchannel ~~17~~29 at the second time slot, structure includes pilots and is in the structure of (Symbol Number, Subcarrier Index, I value / Q Value)]:

~~(35,448,+1/0), (35,449,-0.707/+0.707), (35,450,-0.707/-0.707), (35,451,+1/0), (35,512,+1/0), (35,513,-0.707/+0.707), (35,514,-0.707/-0.707), (35,515,-1/0), (35,984,+1/0), (35,985,-0.707/-~~

~~0.707), (35,986,+0.707/-0.707), (35,987,+1/0), (35,1189,-1/0), (35,1190,-0.707/-0.707), (35,1191,-0.707/-0.707), (35,1192,+1/0), (35,1505,+1/0), (35,1506,+0.707/-0.707), (35,1507,-0.707/+0.707), (35,1508,+1/0), (35,1753,-1/0), (35,1754,-0.707/-0.707), (35,1755,+0.707/-0.707), (35,1756,+1/0), (36,448,-0.707/+0.707), (36,449,+0.707/-0.707), (36,450,+0.707/-0.707), (36,451,+0.707/+0.707), (36,512,+0.707/+0.707), (36,513,-0.707/-0.707), (36,514,-0.707/+0.707), (36,515,+0.707/+0.707), (36,984,-0.707/-0.707), (36,985,+0.707/+0.707), (36,986,+0.707/-0.707), (36,987,-0.707/+0.707), (36,1189,+0.707/+0.707), (36,1190,+0.707/-0.707), (36,1191,-0.707/+0.707), (36,1192,-0.707/-0.707), (36,1505,-0.707/-0.707), (36,1506,-0.707/-0.707), (36,1507,-0.707/-0.707), (36,1508,+0.707/-0.707), (36,1753,-0.707/+0.707), (36,1754,-0.707/-0.707), (36,1755,+0.707/-0.707), (36,1756,+0.707/+0.707), (37,448,+1/0), (37,449,-0.707/-0.707), (37,450,+0.707/-0.707), (37,451,-1/0), (37,512,+1/0), (37,513,-0.707/+0.707), (37,514,+0.707/+0.707), (37,515,+1/0), (37,984,+1/0), (37,985,+0.707/-0.707), (37,986,+0.707/-0.707), (37,987,+1/0), (37,1189,+1/0), (37,1190,+0.707/+0.707), (37,1191,-0.707/-0.707), (37,1192,+1/0), (37,1505,-1/0), (37,1506,-0.707/+0.707), (37,1507,+0.707/-0.707), (37,1508,-1/0), (37,1753,+1/0), (37,1754,-0.707/-0.707), (37,1755,-0.707/+0.707), (37,1756,-1/0), (38,232,+1/0), (38,233,+1/0), (38,234,-0.707/+0.707), (38,235,-0.707/+0.707), (38,704,+1/0), (38,705,+1/0), (38,706,-0.707/+0.707), (38,707,-0.707/+0.707), (38,908,+1/0), (38,909,+1/0), (38,910,-0.707/-0.707), (38,911,-0.707/+0.707), (38,1225,+1/0), (38,1226,+1/0), (38,1227,-0.707/-0.707), (38,1228,-0.707/-0.707), (38,1473,+1/0), (38,1474,+1/0), (38,1475,-0.707/-0.707), (38,1476,+0.707/+0.707), (38,1813,+1/0), (38,1814,+1/0), (38,1815,+0.707/+0.707), (38,1816,-0.707/+0.707), (39,232,-0.707/+0.707), (39,233,-0.707/+0.707), (39,234,+0.707/-0.707), (39,235,+0.707/-0.707), (39,704,+0.707/+0.707), (39,705,-0.707/-0.707), (39,706,+0.707/-0.707), (39,707,-0.707/-0.707), (39,908,-0.707/+0.707), (39,909,-0.707/-0.707), (39,910,-0.707/-0.707), (39,911,-0.707/-0.707), (39,1225,+0.707/-0.707), (39,1226,+0.707/-0.707), (39,1227,-0.707/-0.707), (39,1228,+0.707/-0.707), (39,1473,-0.707/+0.707), (39,1474,+0.707/-0.707), (39,1475,-0.707/+0.707), (39,1476,-0.707/+0.707), (39,1813,+0.707/+0.707), (39,1814,-0.707/+0.707), (39,1815,-0.707/+0.707), (39,1816,-0.707/-0.707), (40,232,+1/0), (40,233,+1/0), (40,234,+0.707/-0.707), (40,235,+0.707/-0.707), (40,704,+1/0), (40,705,+1/0), (40,706,+0.707/-0.707), (40,707,+0.707/-0.707), (40,908,+1/0), (40,909,+1/0), (40,910,+0.707/-0.707), (40,911,-0.707/+0.707), (40,1225,+1/0), (40,1226,+1/0), (40,1227,+0.707/+0.707), (40,1228,+0.707/-0.707), (40,1473,+1/0), (40,1474,+1/0), (40,1475,+0.707/-0.707), (40,1476,-0.707/+0.707), (40,1813,+1/0), (40,1814,+1/0), (40,1815,+0.707/-0.707), (40,1816,-0.707/+0.707),~~

(0,448,+1/0)(0,449,+0.707/+0.707)(0,450,-0.707/-0.707)(0,451,-1/0)
(0,512,-1/0)(0,513,-0.707/+0.707)(0,514,+0.707/-0.707)(0,515,-1/0)
(0,984,-1/0)(0,985,+0.707/+0.707)(0,986,+0.707/-0.707)(0,987,-1/0)
(0,1189,+1/0)(0,1190,-0.707/-0.707)(0,1191,+0.707/+0.707)(0,1192,-1/0)
(0,1505,-1/0)(0,1506,-0.707/-0.707)(0,1507,-0.707/-0.707)(0,1508,+1/0)
(0,1753,-1/0)(0,1754,-0.707/-0.707)(0,1755,+0.707/-0.707)(0,1756,+1/0)
(1,448,-0.707/-0.707)(1,449,+0.707/-0.707)(1,450,+0.707/-0.707)(1,451,-0.707/+0.707)
(1,512,-0.707/+0.707)(1,513,-0.707/-0.707)(1,514,+0.707/-0.707)(1,515,-0.707/-0.707)
(1,984,+0.707/+0.707)(1,985,+0.707/+0.707)(1,986,-0.707/+0.707)(1,987,+0.707/+0.707)
(1,1189,+0.707/-0.707)(1,1190,-0.707/-0.707)(1,1191,+0.707/+0.707)(1,1192,-0.707/+0.707)
(1,1505,+0.707/+0.707)(1,1506,+0.707/+0.707)(1,1507,-0.707/+0.707)(1,1508,-0.707/+0.707)
(1,1753,-0.707/+0.707)(1,1754,-0.707/-0.707)(1,1755,+0.707/+0.707)(1,1756,+0.707/-0.707)
(2,448,+1/0)(2,449,+0.707/+0.707)(2,450,-0.707/-0.707)(2,451,+1/0)

(2,512,-1/0)(2,513,-0.707/-0.707)(2,514,-0.707/+0.707)(2,515,-1/0)
(2,984,+1/0)(2,985,+0.707/-0.707)(2,986,-0.707/+0.707)(2,987,-1/0)
(2,1189,+1/0)(2,1190,-0.707/+0.707)(2,1191,-0.707/+0.707)(2,1192,-1/0)
(2,1505,-1/0)(2,1506,-0.707/-0.707)(2,1507,+0.707/-0.707)(2,1508,+1/0)
(2,1753,-1/0)(2,1754,+0.707/-0.707)(2,1755,-0.707/+0.707)(2,1756,+1/0)
(3,328,-1/0)(3,329,+0.707/-0.707)(3,330,-0.707/-0.707)(3,331,-1/0)
(3,524,-1/0)(3,525,-0.707/+0.707)(3,526,+0.707/-0.707)(3,527,-1/0)
(3,784,-1/0)(3,785,-0.707/+0.707)(3,786,-0.707/+0.707)(3,787,-1/0)
(3,1209,-1/0)(3,1210,+0.707/-0.707)(3,1211,-0.707/-0.707)(3,1212,-1/0)
(3,1361,+1/0)(3,1362,+0.707/+0.707)(3,1363,+0.707/+0.707)(3,1364,+1/0)
(3,1601,+1/0)(3,1602,+0.707/+0.707)(3,1603,+0.707/-0.707)(3,1604,+1/0)
(4,328,+0.707/-0.707)(4,329,-0.707/+0.707)(4,330,+0.707/-0.707)(4,331,+0.707/+0.707)
(4,524,-0.707/+0.707)(4,525,-0.707/+0.707)(4,526,-0.707/-0.707)(4,527,+0.707/+0.707)
(4,784,+0.707/+0.707)(4,785,-0.707/-0.707)(4,786,-0.707/+0.707)(4,787,-0.707/+0.707)
(4,1209,-0.707/+0.707)(4,1210,+0.707/-0.707)(4,1211,-0.707/-0.707)(4,1212,-0.707/-0.707)
(4,1361,-0.707/-0.707)(4,1362,-0.707/+0.707)(4,1363,+0.707/+0.707)(4,1364,-0.707/+0.707)
(4,1601,-0.707/+0.707)(4,1602,+0.707/-0.707)(4,1603,-0.707/-0.707)(4,1604,-0.707/-0.707)
(5,328,+1/0)(5,329,-0.707/+0.707)(5,330,+0.707/+0.707)(5,331,+1/0)
(5,524,-1/0)(5,525,-0.707/+0.707)(5,526,+0.707/+0.707)(5,527,+1/0)
(5,784,+1/0)(5,785,+0.707/-0.707)(5,786,-0.707/+0.707)(5,787,-1/0)
(5,1209,-1/0)(5,1210,-0.707/+0.707)(5,1211,+0.707/-0.707)(5,1212,+1/0)
(5,1361,+1/0)(5,1362,+0.707/+0.707)(5,1363,-0.707/+0.707)(5,1364,-1/0)
(5,1601,-1/0)(5,1602,+0.707/-0.707)(5,1603,+0.707/+0.707)(5,1604,+1/0)

=== End text changes ====

4. References

[1] IEEE 802.16-2004
[2] P80216_Cor1_D4