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Re:	IEEE P802.16REVd/D5-2004
Abstract	Clarification of ambiguities on BS turnaround gaps TTG and RTG
Purpose	Adopt changes.
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TTG and RTG clarifications

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1. Introduction

In IEEE 802.16-2004, there is an ambiguity with the terms TTG and RTG, which apply only to the BS as explained by their definitions.

Some time, the terms TTG and RTG are also applied to the SS instead of the correct terms SSTTG and SSRTG.
Moreover, the definition of the BS TTG and BS RTG is somewhat ambiguous because it mixes the transmitter and receiver of the BS and of the SS although turnaround gap of the SS is fully described by SSTTG and SSRTG. Finally, the definition assumes the SS does not transmit during TTG which is incorrect because of the transmission delay.

The terms TTG and RTG should be renamed to BSTTG and BSRTG for enhanced clarity. Any ambiguity should be removed from their definition.

Besides this problem, the parameter is meaningless for FDD system as underlined in section 12.2.3.1.3.1 and has no minimum/maximum/default values for TDD system in OFDM physical layer. Publishing an unused parameter could potentially create interoperability problems because the BS could publish a value which is not in sync with the actual structure of the map and the SS could rely on this parameter, making wrong assumptions on the structure of the map.

BSRTG and BSTTG should then be removed from DCD messages in OFDM phy.

This contribution amends changes made in IEEE P802.16-2004/Cor1/D1.

2. Text changes

[Add the following text page 1 line 38]

Change every occurrence of TTG with BSTTG and every occurrence of RTG with BSRTG unless explicitly modified in this document.

[Modify definition of the definition 3.45 page 4 line 52 as indicated]

3.45 BS receive/transmit transition gap (BSRTG): A gap between the last sample of the uplink burst and the first sample of the subsequent downlink burst at the antenna port of the BS in a time division duplex (TDD) transceiver. This gap allows time for the base station (BS) to switch from receive to transmit mode ~~and SSs to switch from transmit to receive mode~~. During this gap, the BS ~~and SS are~~ is not transmitting modulated data but simply allowing the BS transmitter carrier to ramp up~~,~~ and the transmit/receive (Tx/Rx) antenna switch to actuate~~, and the SS receiver sections to activate~~. Not applicable for FDD systems.

[Modify definition of the definition 3.63 page 5 line 1]

3.63 BS transmit/receive transition gap (BSTTG): A gap between the last sample of the downlink burst and the first sample of the subsequent uplink burst in a time division duplex (TDD) transceiver. This gap allows time for the base station (BS) to switch from transmit to receive mode ~~and SSs to switch from receive to transmit mode~~. During this gap, the BS ~~and SS are~~ is not transmitting modulated data but simply allowing the BS transmitter carrier to ramp down, the transmit/receive (Tx/Rx) antenna switch to actuate, and the BS receiver section to activate. Not applicable for FDD systems.

[Add the following text page 35 line 6]

8.1.3 Duplexing techniques and PHY Type parameter encodings

8.1.3.2 TDD operation

Change subclause 8.1.3.2.1 as indicated:

8.1.3.2.1 BSTTG

The BSTTG is a gap between the downlink burst and the subsequent uplink burst. This gap allows time for the BS to switch from transmit to receive ~~mode and SSs to switch from receive to transmit mode~~. During this gap, the BS ~~and SS are~~ is not transmitting modulated data but simply allowing the BS transmitter carrier to ramp down, the transmit/receive (Tx/Rx) antenna switch to actuate, and the BS receiver section to activate. After the gap, the BS receiver shall look for the first symbols of uplink burst. This gap is an integer number of PS durations and starts on a PS boundary.

Change subclause 8.1.3.2.2 as indicated:

8.1.3.2.2 BSRTG

The BSRTG is a gap between the uplink burst and the subsequent downlink burst. This gap allows time for the BS to switch from receive to transmit mode ~~and SSs to switch from transmit to receive mode~~. During this gap, the BS ~~and SS are~~ is not transmitting modulated data but simply allowing the BS transmitter carrier to ramp up~~,~~ and the Tx/Rx antenna switch to actuate~~, and the SS receiver sections to activate~~. After the gap, the SS receivers shall look for the first symbols of QPSK modulated data in the downlink burst. This gap is an integer number of PS durations and starts on a PS boundary.

[Insert the following text page 41 line 57]

Change the definition of the 'Connection Identifier' field below Table 236 as indicated:

Connection Identifier (CID)

Represents the assignment of the IE to a broadcast, multicast or unicast address. If the broadcast or multicast CID is used then it is possible to concatenate unicast MAC PDUs (with different CIDs) into a single DL burst. During a broadcast or multicast DL burst it is the responsibility of the BS to ensure that any MAC PDUs sent to an HFDD SS do not overlap (in time; taking SSTTG and SSRTG into account) any UL allocations for that SS. An HFDD SS for which a DL MAP IE and UL MAP IE overlap in time shall use the UL allocation and discard DL traffic during the overlapping period.

[Insert two rows in table 346 page 130, line 10]

BSTTG	7	1	BSTTG (in PSs). Used on TDD systems only.	SCa, ~~OFDM,~~ OFDMa
BSRTG	8	1	BSRTG (in PSs). Used on TDD systems only.	SCa, ~~OFDM,~~ OFDMa