

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Corrections and clarifications on periodic ranging process in OFDMA.	
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Re:	IEEE P802.16/Cor1/D2	
Abstract	This contribution proposes some corrections and clarifications on periodic ranging process in OFDMA.	
Purpose	Adopt changes.	
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Corrections and clarifications

on periodic ranging process in OFDMA.

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1. Introduction

In 802-16-2004, there are ambiguities in the description of the OFDMA periodic ranging process on the SS. The ambiguities are mainly located in figure 90, which described the finite state machine at the SS responsible for the periodic ranging process.

- The figure and the text state that the SS sends a ranging code. The text mentions a periodic ranging domain which is not defined. More precisely, the spec should state that the SS sends a periodic ranging code.
- The figure does not show the back-off mechanism contrary to the figures describing the initial ranging process, which may lead to the erroneous conclusion that there is no backoff in periodic ranging.
- T4 is the SS version of the T27 timer at the BS. T4 should then be restarted only when there is data grant to the SS. In the current state of the standard, T4 is restarted automatically after a T4, which does not look correct.
- T3 controls the time before the reception of the RNG-RSP. It's orthogonal to T4 counter. T3 should be cleared after a RNG-RSP is received and started when the first periodic ranging code is sent to the BS.
- When a RNG-RSP is received, the SS should clear its retry counter.

2. Text changes

[Insert section page 47 line 32]

6.3.10.3.2 Periodic ranging and automatic adjustments

Modify the text of this sub-clause as indicated:

An SS that wishes to perform periodic ranging shall take the following steps:

- The SS shall choose randomly a Ranging Slot (with the use of a binary truncated exponent algorithm to avoid possible re-collisions) at the time to perform the ranging, then it chooses randomly a Periodic Ranging Code (~~from the Periodic Ranging domain~~) and sends it to the BS (as a CDMA code).
- The BS cannot tell which SS sent the CDMA ranging request; therefore, upon successfully receiving a CDMA Periodic Ranging Code, the BS broadcasts a Ranging Response message that advertises the received Periodic Ranging Code as well as the ranging slot (OFDMA symbol number, subchannel, etc.) where the CDMA Periodic Ranging code has been identified. This information is used by the SS that sent the CDMA Periodic ranging code to identify the Ranging Response message that corresponds to its ranging request. The Ranging Response message contains all the needed adjustment (e.g., time, power, and possibly frequency corrections) and a status notification.
- Upon receiving a Ranging Response message with continue status, the SS shall continue the ranging process with further periodic ranging codes randomly chosen.
- Using the OFDMA ranging mechanism, the periodic ranging timer is controlled by the SS, not the BS.
- The BS may send an unsolicited RNG-RSP as a response to a CDMA-based bandwidth-request or any other data transmission from the SS.

When the SS receives an unsolicited RNG-RSP message, it shall reset the periodic ranging timer and adjust the parameters (timing and power, etc.) as notified in the RNG-RSP message.

Replace figure 90 with the following figure

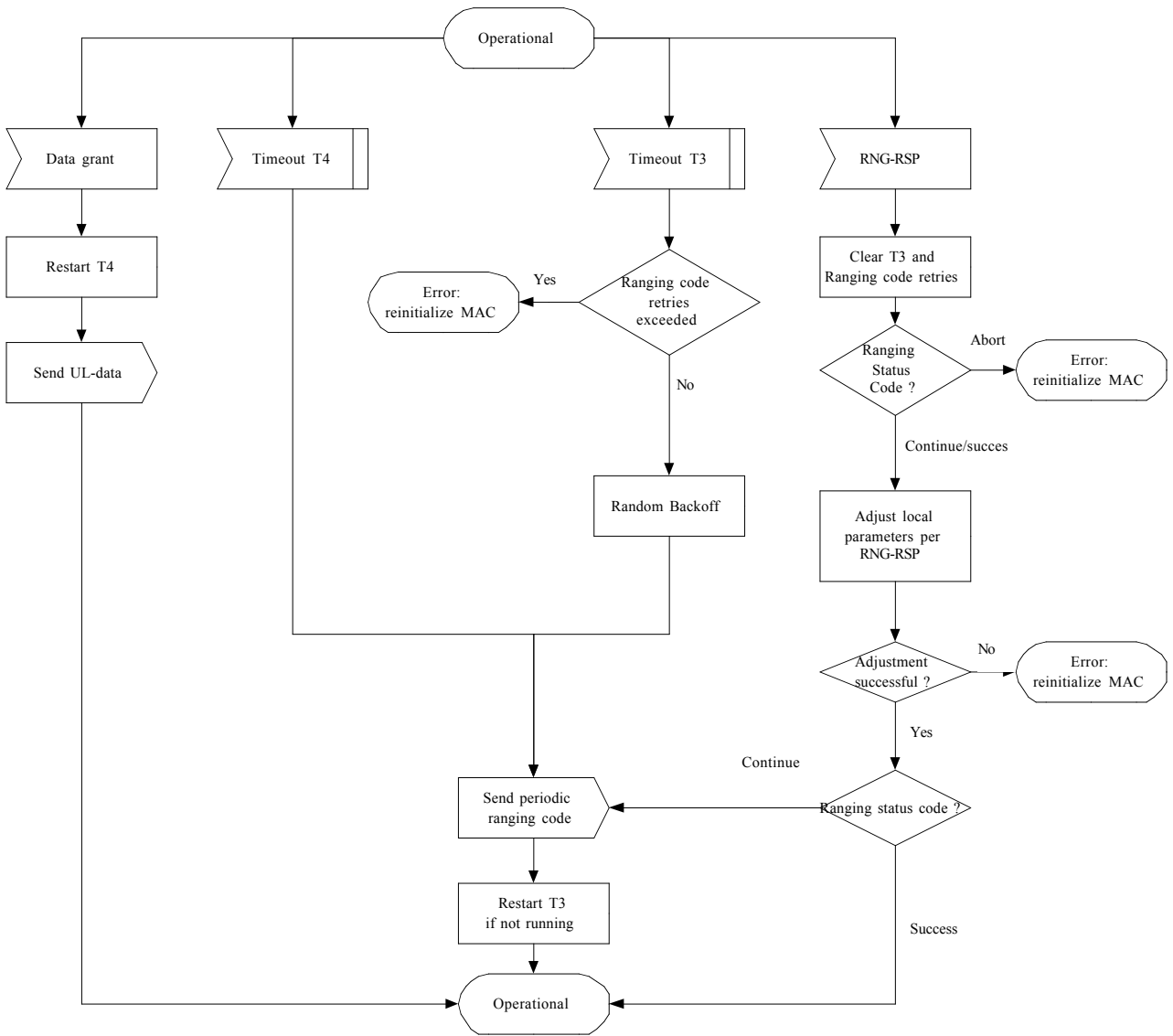


Figure 90—Periodic CDMA ranging—SS