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Re:	In response to call for comments in 802.16ab-01/02	
Abstract	The current ARQ mechanism specified for the TG3 and TG4 MAC has two different options for Sequence Numbering, thus making the protocol very complex. This contribution contains some recommendations to simplify the protocol.	
Purpose	Change the ARQ mechanism in 802.16ab-01/01 as proposed	
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ARQ Protocol for 802.16ab

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1. Introduction

The current ARQ protocol specified for TG3 and TG4 contains two different schemes for sequence numbering:

- a) The first scheme defined in Section 2.1.2 of [1], is based on Block Numbering. This scheme specifies that the transmitted MSDUs and MSDU fragments be logically divided into blocks that never change, but may be assembled differently when re-transmitting the data. This scheme has a great deal of flexibility associated with it, especially since the block size may vary from 1 to N bytes.
- b) The second scheme defined in Section 2.1.3 of [1] is based on MPDU Numbering. In this scheme, each MPDU is assigned a sequence number irrespective of the number of bytes in the MPDU.

The specification of two different types of schemes to assign Sequence Numbers has the following drawbacks:

- 1) In the interests of simplicity, a standard should not have 2 ways of solving the same problem. Doing so leads to additional complexity, without any payback.
- 2) In order to support two types of numbering schemes, there is an explosion in the different types of ACK packet formats that have to be supported, as can be seen in Section 2.1.4.3.

The Block Numbering scheme has been shown to be very flexible, and can accommodate a wide range of ARQ schemes, including a variation of MPDU numbering as a special case. It allows for flexibility in the definition of the re-transmitted MPDUs, which is very crucial in supporting an adaptive PHY layer. The MPDU based Sequence Numbering does not allow for any flexibility in the definition of re-transmitted MPDUs, which can considerably complicate scheduling with an adaptive PHY layer.

In view of the above, we propose that the MPDU based numbering scheme be removed from the document, and only the Block Numbering be supported. Specifically, the following Sections should be removed from [1]: Section 2.1.3, Section 2.1.4.4.3, Section 2.1.7.3.

References: [1] IEEE 802.16ab-01/01, "Air Interface for Fixed Broadband Wireless Access Systems Part A: Systems between 2 and 11 GHz".