Project	**IEEE 802.16 Broadband Wireless Access Working Group** **<http://ieee802.org/16>**
Title	**A Contribution to TGa: ARQ Feedback Payload**
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Re:	This is a contribution to the IEEE 802.16 TGa.
Abstract	This contribution provides an enhanced description to the piggybacked ARQ feedback.
Purpose	To Enhance the piggybacked ARQ feedback description in 802.16a/D2.
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1   Introduction

This document provides an enhanced description of piggybacked ARQ feedback.

2   Reference

[TG1/D5]   IEEE P802.16/D5 - 2001.

[TGa/D2]   IEEE 802.16a/D2 - 2002.

3   Suggested Text for replacing line 17 to line 39 on page 46

6.2.3.4.3.1 Piggybacked ARQ Feedback

The ARQ feedback may be piggybacked on an existing connection. The piggybacked ARQ feedback is not in the form of sub-header, instead it is in the form of packed payload of the MAC PDU. The presence of the piggybacked ARQ feedback payload is indicated by the value of the TYPE field in the generic MAC header. When the piggybacked ARQ feedback payload is present, it shall be the first packed payload of the MAC PDU. Similar to other packed payloads, the ARQ feedback payload is also preceded by a packing sub-header. However, the FSN field shall be ignored for the ARQ feedback payload and the FC bits shall be set to 00.

Both non-ARQ connections and ARQ connections can piggyback ARQ feedback, but with different packing sub-headers. For example, Table 146 defines two type values, 0x0A and 0x0C, for the piggybacked ARQ feedback present, where TYPE=0x0A is for non-ARQ connection to piggyback ARQ feedback with non-ARQ packing sub-header; TYPE=0x0C is for ARQ connection to piggyback ARQ feedback with ARQ packing sub-header.

Figure 136 illustrates the examples of MAC PDU with piggybacked ARQ feedback.

Generic MAC Header (TYPE=0x0A)	non-ARQ packing sub-header	ARQ feedback payload (one or more ARQ feedback IEs)	non-ARQ packing sub-header	payload (one MAC SDU or fragment)	CRC-32

(a) Non-ARQ Connection Piggybacking ARQ Feedback

Generic MAC Header (TYPE=0x0C)	ARQ packing sub-header	ARQ feedback payload (one or more ARQ feedback IEs)	ARQ packing sub-header	payload (one MAC SDU or fragment)	CRC-32

(b) ARQ Connection Piggybacking ARQ Feedback

Generic MAC Header (TYPE=0x0B)	Grant Management sub-header	non-ARQ packing sub-header	ARQ feedback payload (one or more ARQ feedback IEs)	non-ARQ packing sub-header	payload (one MAC SDU or fragment)	CRC-32

**(c) Non-ARQ Connection Piggybacking ARQ Feedback
and Grant Management Sub-header Present (UL only)**

Generic MAC Header (TYPE=0x0D)	Grant Management sub-header	ARQ packing sub-header	ARQ feedback payload (one or more ARQ feedback IEs)	ARQ packing sub-header	payload (one MAC SDU or fragment)	CRC-32

**(d) ARQ Connection Piggybacking ARQ Feedback
and Grant management Sub-header Present (UL only)**

FIGURE 136   Examples of MAC PDU with Piggybacked ARQ Feedback