Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Establishing Maximum Fragment Size**
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Source(s)	Robert Nelson Raze Technologies 2540 E Plano Pkwy Suite 188 — Voice: (972) 516-1283 Fax: (972) 578-9081 [mailto:bnelson@razetechnologies.com]
Re:	Working Group Letter Ballot #7 "Draft Amendment to IEEE Standard for Local and Metropolitan Area Networks –Part 16:Air Interface for Fixed Broadband Wireless Access Systems – Medium Access Control Modifications and Additional Physical Layer Specifications for 2-11 GHz "
Abstract	This contribution suggests a mechanism for allowing a subscriber and base station to establish the maximum size of fragments carried on a connection.
Purpose	Referenced by Ballot #7 comments suggesting updates to the current draft document
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Establishing Max Fragment Size

Bob Nelson

Raze Technologies Inc

Introduction

The current MAC definition provides no mechanism for limiting the size of fragments formed and transferred over connections. As a result, a receiver must be capable of dealing with any fragment size up to the 2048-byte limit imposed by the length field of the generic and packing headers. Further as has been discussed at great length, unlimited fragment size combined with modulation changes or changes in traffic loading may doom fragments on ARQ-enabled connections from ever being retransmitted.

References

IEEE Std 802.16-2001
IEEE P802.16a/D4-2002

Proposed Change

These issued can be resolved by allowing the base station and subscriber to negotiate the maximum size of fragments to be transferred over a connection. This is accomplished by defining a TLV parameter, Max Fragment Length, which can be carried by the connection create/change request/response messages.

The value of the fragment length would be negotiated during the connection management dialogs with the smaller size requested by either end becoming the size used.

Once established, the transmitter would be required to assure that all fragments formed for transmission were no larger than the agreed upon length.

Specific D4 Document Changes

Page   Line   Section 6.2.3.3

*Insert the following at the end of the clause, immediately before the start of **6.2.4 Packing**:*

> The maximum size of a fragment may be negotiated during or after connection establishment. When a maximum value has been established, the transmitter shall only form fragments whose length is less than or equal to this value even if the pending bandwidth allocation would accept a larger fragment.

Page   246   Line 64   Section 11.4.8.18.6

Insert the following new section11.4.8.19 immediately before the start of chapter 12

> 11.4.8.19 Maximum Fragment Length

> This value of this parameter specifies the maximum size fragment a transmitter shall ever form or a receiver shall ever expect to receive. Valid values are 1-2041. A value of zero indicates no restriction.

> This parameter is established by negotiation during the connection creation and connection change dialogs. The requester includes its desired setting in the REQ message. The receiver of the REQ message shall take the smaller of the value it prefers and value in the REQ message. This minimum value is included in the RSP message and becomes the agreed upon length value.

> Absence of the parameter during a DSA dialog shall indicate the originator of the message wishes no restriction. Absence of the parameter during a DSC dialog indicates the current setting shall remain in force.

Type	Length	Value	Scope
[24/25].xx	2	0 – Unrestricted 1-2041 Desired Length	DSA-REQ, DSA-RSP DSC-REQ, DSC-RSP