

Proposal for MAC enhancements to 802.16.1 MAC for 802.16.3 Application

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Purpose:

It is recommended that mode A of 802.16.1 specs, which is an FDD application, be adopted with the changes mentioned in this document as the MAC of TG1 and TG3 MAC sub groups with the sub groups working together to implement the changes.

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**Proposal for MAC
enhancements to 802.16.1 MAC
for 802.16.3 Application**

Presented by: George Fishel, et all

Introduction

- This contribution proposes meeting the MAC needs of 802.16.3 through a common MAC with 802.16.1. The common MAC uses enhancements to Mode A such that it is simpler, lower cost, and more IP centric for present point-to-multipoint as well as future IP based services

Recommended Changes

- A non-connection-oriented option (extended header) is added to allow direct, low-risk, proven IP MAC commonality with existing IP residential services, encryption mechanisms, and allow for future expansion of common IP services.
- A CID of 14 bits is added as an option within the 16 bits 802.16 CID framework to allow commonality with IP network and residential service Ids.

Recommended Changes Continued

- The Mode A piggyback request limit is increased beyond 256 bytes (which presently is much less than maximum Ethernet or IP packet -- an ATM driven limitation) to eliminate unnecessary and inefficient fragmentation overhead and associated additional delay.
- The HCS is increased from 1 to 2 bytes so it is large enough for the MMDS environment.

Recommended Changes Continued

- Provisions are added for additional messages, antenna diversity, OFDM and MIMO support.
- A non-connection-oriented option (extended header) is added to allow tie into existing related standards (ITU-R F.1499/DOCSIS 1.1) and equipment.

Conclusion:

- Adopting the IEEE 802.16 TG1 MAC with the previously mentioned changes will significantly accelerate, solidify, and standardize the development of not only the IEEE 802.16 standard, but through its use and application, the in-step development effort for VoIP and other network IP services. The enhancements to Mode A allows IP network services commonality with related IP standards (e.g. IETF/DOCSIS 1.1).